WILLIAM MACGILLIVRAY

M.A., LL.D.

ORNITHOLOGIST

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WILLIAM MACGILLIVRAY

M.A., LL.D.

ORNITHOLOGIST; PROFESSOR OF NATURAL HISTORY, MARISCHAL COLLEGE AND UNIVERSITY, ABERDEEN

A MEMORIAL TRIBUTE

TO

WILLIAM MACGILLIVRAY

M.A., LL.D.

ORNITHOLOGIST; PROFESSOR OF NATURAL HISTORY,
MARISCHAL COLLEGE AND UNIVERSITY,
ABERDEEN

By WILLIAM MACGILLIVRAY
WRITER TO THE SIGNET

'In the eye of nature he has lived'

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'Truth from his lips prevailed with double sway'

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'The old order changeth, yielding place to new'

PREFATORY NOTE

THE sketch of Professor MacGillivray's life and work which follows was at first written in the form, and with the brevity, of an article intended for a newspaper in connection with the movement, then begun, for the promotion of a Memorial of him; but it was not so used, and was retained, altered, and added to from time to time, the result partly of suggestions from friends, most of them former pupils of the Professor, and partly of information which came to me from different sources at odd times. It is in no sense a "Life" of my eminent namesake—for such a work I am not competent—but merely an appreciative sketch in which I have tried to record, and to some extent illustrate, my own conception of his special pre-eminence as an ornithologist, and my warm admiration of his high qualities of mind and character, as these come out so prominently in connection with his life's work in the different spheres in which his lot had been successively cast.

W. MACGILLIVRAY.

4 ROTHESAY PLACE,
EDINBURGH, *15th May* 1901.

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I

SKETCH OF PROF. MACGILLIVRAY'S LIFE AND WORK

The Memorial.

It is upwards of forty-eight years since William MacGillivray, M.A., LL.D., Professor of Natural History and Lecturer on Botany in Marischal College and University, Aberdeen, son of William MacGillivray, a surgeon in the Army, died in his fifty-sixth year—having been born in Old Aberdeen in 1796. He was buried in the New Calton Burying-Ground, Edinburgh, where his wife and two children, who predeceased him, had previously been interred. Until nearly the close of last year there was not even a tombstone to show where the author of a *History of British Birds* and *The Natural History of Deeside and Braemar* lies, an oversight resulting no doubt from the circumstance of all the members of his family having, either before his death or soon after, gone for permanent residence abroad.

Nearly three years ago the attention of some of Professor MacGillivray's former students—all now well advanced in life—was called to the oversight which

ill became the memory of so eminent a naturalist and so estimable a man. A meeting of several gentlemen who specially cherished his memory was held in Edinburgh on 27th May 1898; and, with a view to promoting a suitable memorial of him, a committee was then appointed with full powers to follow out the object of the meeting and to devise and carry into effect such a scheme for a memorial as they might find to be practicable and most fitted for its purpose, with power to add to their number. The following gentlemen ultimately formed the committee :—

The Rev. William Mair, D.D., Earlston.

The Rev. Patrick Beaton, Paris, son-in-law of Professor MacGillivray.

J. A. Harvie Brown, Esq., of Dunipace.

Professor J. Cossar Ewart, M.D., F.R.S., Edinburgh.

The Rev. James Farquharson, D.D., 47 Mardale Crescent, Edinburgh (senior minister of Selkirk).

Alexander Fraser, Esq., Wimmera, Bruntsfield Place, Edinburgh.

Principal Sir W. D. Geddes, LL.D., Aberdeen (now dead).

Professor E. Ray Lankester, LL.D., F.R.S., Director of the Museum of Natural History, Kensington.

William MacGillivray, Esq., W.S., Edinburgh.

The Rev. Alexander Mitchell, D.D., Dunfermline.

The Rev. James Mitchell, D.D., South Leith.

Emeritus-Professor Sir John Struthers, LL.D., Edinburgh (now dead).

Professor J. W. H. Trail, F.R.S., Aberdeen.

John Forbes White, Esq., LL.D., Dundee.

Dr. Mair was appointed chairman of the com-

mittee, and Dr. Farquharson secretary and treasurer. Subscriptions were readily obtained from relations of Professor MacGillivray, all now abroad, from former students in his classes and from others; and the object for which the committee was appointed has now been attained.[1]

The memorial is of a double character. A monument has been erected at MacGillivray's grave and a mural memorial tablet has been placed in Marischal College, Aberdeen.

The monument consists of a large slab of Peterhead red granite with an Iona cross in a setting of Celtic scroll work cut in the upper part of its face, while a bronze relief of an eagle has been inserted in the centre compartment of a Celtic arcade ornament on its lower part. The middle of the stone, which, with the cross, alone is polished, contains the following inscription:—"In memory of William MacGillivray, M.A., LL.D., born 1796, died 1852, author of a *History of British Birds* and other standard works in Natural Science; Professor of Natural History and Lecturer on Botany in Marischal College and University from 1841 to 1852. Erected in 1900, together with a memorial brass in Marischal College, Aberdeen, by his relatives and surviving students, who affectionately cherish his memory, and by others desirous of doing honour to his character as a man and to his eminence as a naturalist." The entire memorial—both stone and bronze—is a piece of fine artistic work, and

[1] See a list of the subscribers at the end of this volume.

is in perfection of good taste. Nothing could be more appropriate as a memorial of the West Highland ornithologist. The monument was designed and executed by Messrs. S. M'Glashen and Son, Edinburgh, while the eagle was modelled and cast by Mr. D. W. Stevenson, R.S.A., from MacGillivray's own very fine life-like drawing of the golden eagle now in the Natural History Museum, Kensington. The vitality and power of expression in the drawing have been rendered with success in the metal. The eagle forming the frontispiece to this volume is a zincocolotype from a photograph of it.

The tablet for Marischal College was designed by Mr. C. R. Ashbee, architect, 37 Cheyne Walk, Chelsea, and was executed by the Guild of Handicraft, Limited, 16 Brook Street, London.

It is a beautiful work of art, and is specially suitable for its position in Marischal College as a memorial of the famous ornithologist and Professor of Natural History in that college. The inscription, in the same terms as that on the monument, and in an antique, picturesque and tasteful style of lettering, occupies the centre of the plate, while the borders are filled with natural history and botanical objects — all in conformity with nature—the birds especially being instinct with life, each exhibiting attitude and action characteristic of its species. The borders are in open work of beaten copper, partly bronzed and partly gilded, shown effectively against a background of pale red, while the whole of the remaining parts of the

tablet, including its frame, with flat pilasters at the sides and the cornice, are of oak. Every detail of the work is beautifully finished; and it is difficult to conceive a finer specimen of art of the kind, whether in design or in execution.

An extremely interesting ceremonial took place in Marischal College on 20th November last, when the tablet was formally unveiled and presented to the University by Dr. John Forbes White on behalf of the committee and subscribers. The University was represented by Principal Marshall Lang and several of the professors, while others interested in perpetuating the memory of Professor MacGillivray, including a number of ladies, formed part of the company present.

A report of the proceedings from the *Aberdeen Free Press* forms a subsequent part of this memorial volume. Dr. White having been a distinguished student of Professor MacGillivray, and having in his Aberdeen University days been in intimate sympathetic relations with him, there was no one better fitted to discharge the duty which was put upon him, and none could have done it better. His address is everything that could have been desired for the occasion and is well worthy of being preserved in a permanent form.

As time goes on the real value of Professor MacGillivray's work, and especially of his *History of British Birds*, continues to grow in the estimation of scientists; while that delightful book has never ceased to be attractive to the general reader

who is a lover of birds and a sympathetic observer of bird life.

There has not yet been written any adequate account of MacGillivray's life and work; and, unfortunately, the means of now writing such scarcely exist. It is known that from an early period he kept full and careful journals, by the aid of which a biography of great interest could have been prepared, but these were destroyed years ago, and their place, it is feared, cannot now be supplied from any other source. The following short sketch of his life and work has been prepared from such means as have been found to be yet readily available.

His life history of fifty-six years may be divided into five successive periods, each of which has its peculiar interest—especially when regarded with reference to the outcome of his many undertakings.

1.—His Childhood in Harris.

The *first* period extends from the time when he left Aberdeen, three years old, for Harris, where his childhood was spent with two uncles, tenants of the farm of Northtown there, brothers of his father, who was then with his regiment, the Cameron Highlanders. He remained there attending the parish school at Obbe until he was eleven years of age, when he returned to Aberdeen for the advantages of further education, which was not obtainable in Harris. During these

eight years in Harris he must have learned much which favoured the native bent of his mind towards the study of nature. The sea, the rocks, and the mountains in their ever-varying aspects, in summer and in winter, in sunshine and in storm, with their wild fowl in vast numbers, species succeeding species in constant movement in their respective seasons according to their habits and the necessities of their nature, were all fitted to minister to the growth of a mind which was naturally contemplative, and at the same time extremely observant, sympathetic with every form of life, and readily responsive to the grandeur and the beauties of Hebridean scenery.

There is no written existing record as to how he passed those years, but that "the foundations of his mind" had then been laid, with promise of subsequent growth in the direction of its ultimate development, there can be no doubt. In a poem by him, more particularly referred to in a subsequent part of this sketch, he says:

> "The solitudes of nature were my school,
> And in the moaning voice of streams and winds,
> Without the aid of dull scholastic rule,
> I felt the tone which in the lone heart finds
> Its echo."

2.—University Period in Aberdeen.

The *second* period extends from the time of his return to Aberdeen, first for further school education

and afterwards for his university course of study at King's College, which he entered when twelve years old, just one year before the death of his father, who was killed in the battle of Coruña in February 1809. After finishing his arts curriculum and taking his M.A. degree there, he entered on the study of medicine. While pursuing his medical learning he began, in 1817, the study of zoology, his only guides, as he said, being Linnæus and Pennant, while he knew no one who had any knowledge of the subject except a friend and fellow-student, William Craigie.[1]

During this period of study at Aberdeen he was in the habit of spending his long summer holidays with his relations in Harris. His journeys to and fro, in so far as on the mainland, were always performed on foot; and in his book on British birds he gives a very interesting and picturesque account of a walk on one occasion during the night from Blair Atholl on his way back from the West to the Wells of Dee, where he had arranged to meet William Craigie on the morning of the following day. Another very interesting excursion to the sources of the Dee, while on his way to the West in 1819, is narrated in his *Natural History of Deeside.*

During his holidays in Harris he devoted much of his time to teaching in the school at Obbe; and a local tradition of him still is that he was a most attractive teacher, often directing the minds of his pupils to those

[1] William Craigie afterwards emigrated to Canada and settled in the town of Hamilton, Ontario.

aspects of nature, both animate and inanimate, in which he was himself specially interested, dwelling much on the evidence of creative power and design, which he found everywhere in nature. He also spent much time in watching by night as well as by day the lives and habits of birds, often concealing himself for many hours continuously, now in some cave or rocky recess from which the endless varieties of swimming birds could be most readily seen, and again in some temporary shelter erected by himself on the higher cliffs, from which the eagle, the osprey, the raven, and others could be closely observed.

He made many excursions, whenever opportunity occurred, with his congenial friend, William Craigie, "zealously striving," as he says in the preface to his *Rapacious Birds of Great Britain*, "to add to our common store of knowledge both in zoology and botany. Many pleasant and successful excursions we made together in quest of plants and animals on the romantic braes of the Don, the pebbly shores of the Dee, the rocks of the Cove, the sands of the seashore and the bleak moors of the interior."

The fascination of their pursuits, he tells us, was such that after studying medicine for nearly five years —officiating part of the time as dissector to the lecturer on anatomy at Marischal College—he resolved to relinquish it, and to devote himself exclusively to natural history. Under many difficulties he persevered, wandering far and wide over most parts of Scotland, and exploring "the desolate isles of the West," as he

very appropriately calls the Outer Hebrides. On one occasion he tells us he walked from Aberdeen to London with his journal and Smith's *Flora Britannica* on his back, for the purpose of seeing the country and visiting the British Museum.

MacGillivray's study of medicine was begun in 1814-15, as pupil to George Barclay, M.D., physician to the Aberdeen Infirmary and Lecturer on Surgery in King's and Marischal Colleges. Dr. Barclay was himself then quite a young man—only about three years older than MacGillivray his pupil. He was a native of Aberdeenshire—youngest son of Charles Barclay, Esq., of Templeland, in the parish of Auchterless. He was much respected and trusted as a physician, and beloved by all who had relationships with him, whether professionally or as friends. MacGillivray's attachment to him was deep and sincere; and on his death, of typhus fever, on 20th December 1819, in the twenty-seventh year of his age, MacGillivray, then resident in Edinburgh, wrote and printed "A Tribute to the Memory of a Friend; being a Poem on the Death of George Barclay, M.D.," to which was prefixed a short account of Dr. Barclay's life and character. In the poem he warmly expresses his feelings of attachment towards his deceased teacher and friend, and his warm sense of indebtedness to him. He had sent the poem to Mrs. Barclay in manuscript, accompanying it with a letter dated 4th March 1820, in which he writes: "The poem which accompanies this, such as it is, is the pure offering of feeling, and such as its title indicates. I

could from my soul wish it better, not from selfish motives. I shall be happy if Mrs. Barclay think of it as her friends here do. But in subjecting it to her examination I expect the most unrestrained criticism. . . . I must not indulge in reflections—even though I should be deemed callous. My poem will speak my feelings."

The poem is in the Spenserian stanza, the same as that which had been adopted by Dr. Beattie in his "Minstrel." Beattie ("Bard of the North," as he had been designated) was then a strong poetic influence in the counties of Aberdeen and Kincardine. He was a native of Laurencekirk in Kincardineshire, became parish schoolmaster of Fordoun in the same county, and was afterwards, from 1769 to a few years before his death in 1803, Professor of Moral Philosophy and Logic in Marischal College and University, Aberdeen. The easy, smooth, flowing rhythm of his verse was very attractive to the ear, while the thought and sentiment of his poems were not unfrequently worthy of a more free and less formal poetic diction. Several of his best known poems were included in the Scotch school books which were most in use in MacGillivray's early days. One of these (*Mason's Collection*) was popular in the two counties even within the memory of the writer of this; and the most familiarly known and best loved poem in it was undoubtedly "Beattie's Hermit."

MacGillivray, in his sketch of the life of Dr. Barclay, says: "Beattie was among his favourite authors particularly in poetry." The local predominance of

Beattie's influence, and MacGillivray's affectionate regard for his teacher and friendly guide, no doubt mainly account for the peculiar diction and style of his tributory poem. It is Beattie's "Minstrel" all through —quite the style of the early years of the latter half of the eighteenth century, in which human virtues and vices, with capital initial letters, were personified, while certain stereotyped euphonious words and phrases were constantly repeated whatever the subject of the poem might be,—all associated with strictest propriety of conduct, formal respectability in morals and religion, lone Philomelas in shady groves, powdered wigs, silver buckled shoes, etc. etc. Still, in MacGillivray's poem there is, notwithstanding the antiquated diction, which had been quite abandoned by our best poets early in the nineteenth century, much real poetic feeling with absolute sincerity of purpose. Fine reflective thought also now and again breaks through the ancient mode of expression. This is well illustrated in several of those stanzas in which MacGillivray portrays the character of his deceased friend, and gives free expression to his feelings towards him. As the poem extends to forty pages it is too long for being wholly included in this volume, but several of the more interesting stanzas are quoted from it as affording fair specimens of its general character, and as throwing light on some interesting features of the growing mind of the youthful writer—then only twenty-four years of age. One cannot help regretting, in reading these stanzas, that a young man of his early poetic promise should not have

come within the influence of the unconventional style and imaginative power of Wordsworth, which enabled him to realise and to interpret to others the spiritual in nature as no one else had done. How much it might have added to MacGillivray's appreciation of those aspects of nature which interested him most, while it would have led him to a deeper sense of the divine in nature—true and deep as that sense in him always was. It would probably also have tended towards greater freedom from conventionalities, which must have hampered him more or less (unconsciously) in his search after truth, even in his own departments of science. But the early acquired predilection for the Beattie style of poetry, with the severity of the *Edinburgh Review* criticisms of the "Lake School" and of Wordsworth's poetry in particular, which then prejudiced so many minds against it, sufficiently accounts for the absence of the Wordsworth influence on his mind—intensely devoted to nature as he was.

In one of the extracts from the memorial poem given further on in this volume the writer of it, referring to Dr. Barclay's influence on him, says—

> "The name which hallows this rude song
> Has been to me a blessing and a light
> To guide me on my weary way along,"

and again—

> "He saw my follies, and reprov'd them oft:
> Not in the galling tone of sullen speech,
> But as a friend, in accents firm though soft,"

while in another passage he says—

> "Friend to the friendless, he was all to me
> That my fond heart could wish."

Indeed, again and again throughout the poem his love and respect for Dr. Barclay is expressed with evidently unfeigned sincerity, although at times in language which may to the reader appear bordering on exaggeration—not unnatural in a youthful mind so deeply affected, but which to him was no exaggeration.

The midnight scene in the Hebrides—the subject of the last of the poetic extracts given in this volume—is specially fine, although quite in the Beattie spirit and style—especially the last line, which suggests the effect of it as wooing "the contemplative mind to midnight's bower."

The poem is highly valued, and is carefully preserved, by Dr. Barclay's still surviving son, Mr. George Barclay, of 17 Coates Crescent, Edinburgh.

Mr. Barclay has a distinct recollection of his mother telling him of the first impression made on her by her husband's "wild Highland pupil," when as a young wife she went to Aberdeen in October 1816. No doubt MacGillivray had just then returned from his annual summer stay in Harris—his clothing and his person probably still betraying more or less the effects of his long pedestrian journey, in which there had been much scrambling over rocks, wading through marshes, and wandering among peat bogs in search of rare plants, or for observation of the habits of birds, which had

attracted his attention by the way. He not unnaturally, therefore, presented to Mrs. Barclay more the appearance of a somewhat primitive Hebridean Celt than of the Aberdeen medical student; but the qualities of head and heart soon made him a welcome guest and friend.

3.—Edinburgh Period to 1831.

The *third* period embraces the eleven or twelve years of his earlier residence in Edinburgh. He first went there, he says in the preface to his *Rapacious Birds of Great Britain*, on the advice of a friend, to engage in "a kind of mineralogical speculation." The friend was probably Dr. Barclay, whose father-in-law, Mr. Walter Berry of Edinburgh, was much interested in mineralogy. MacGillivray does not say what the nature of the speculation was, or how it resulted; but he adds that he then attended the lectures of Professor Jamieson, who at that time occupied the Chair of Natural History in the University. He again returned to the Hebrides, where he occupied his time in "hammering gneiss rocks, gathering gulls' eggs, and shooting birds"; but he got tired of that occupation, which, although congenial to him, and was daily adding to his knowledge of nature, afforded no means of present livelihood or prospect of it for the future. Besides having, on 29th September 1820, married Miss Marion MacCaskill of Harris (he being then twenty-

four years of age and she seventeen), the necessity for some settled income must have become urgent. He therefore returned to Edinburgh, where he obtained the position of assistant and secretary to Professor Jamieson, under whom he undertook the charge of the Natural History Museum there. Here he found abundant opportunity for continuing his study of natural history, and especially his favourite branch of it, ornithology, with the aid of the collection of specimens in the Museum, and subjects which came into his hands for dissection, or which he himself collected in the course of his excursions around Edinburgh and elsewhere.

He occupied this position for several years, but desiring to have more leisure, as he explains in the preface to his book on *Rapacious Birds*, for prosecuting his investigations in the field, he resigned it, and resumed his wanderings, extending these more widely than before, mainly for the purpose of enlarging his knowledge of the habits and lives of his feathered favourites—supporting himself and his family, as he says, by his "labours in the closet." What those closet labours consisted of we have no precise information, but they were no doubt principally of the nature of contributions connected with natural history to scientific periodicals, compilations, and other miscellaneous literary work.

4.—Conservator of the Museum of the Edinburgh College of Surgeons, 1831 to 1841—"History of British Birds"—Audubon.

In 1831 he was unanimously chosen, without any influence being sought or used on his behalf, from amongst ten applicants for the position of Conservator of the Museum of the Edinburgh College of Surgeons, as successor to Dr. Knox; and thus began the *fourth* period of his life, which extended to 1841. The amount of work done by him during that period was marvellous, while on the results of it, and of the many years' previous preparation, his fame as an ornithologist mainly rests.

During the ten years he occupied that position, his duties to the Museum were discharged with the most conscientious care and with perfect scientific skill and intelligence. His first year's work was especially arduous and laborious, and it severely tested both his physical and his mental powers. When he entered on his duties on 17th September 1831, the numerous preparations belonging to the College were partly in the old museum in Surgeon Square and partly in two other separate buildings; while their condition and arrangement were far from satisfactory. The existing handsome building was just then being completed from designs by Mr. Playfair, and it fell to MacGillivray to see the contents of the old buildings removed to the new one. He found the preparations in a very un-

satisfactory condition—many of them badly prepared, badly put up, and badly arranged, while almost all were far from clean. He had them thoroughly cleaned and otherwise put into a satisfactory condition, and re-arranged the whole collection, re-labelling every article. The labelling of 4000 articles was of itself a most laborious undertaking, occupying many months. Almost all the labour, except the actual cleaning and the manual work of transport to the new hall, was done by his own hands. In one of his most interesting reports to the Curators—interesting as throwing light on the capacity and character of the man—he says that he must practically do all the work himself, "as no benefit would be derived from the interference of others." The labels in his own neat handwriting are still to be seen attached to many of the preparations which remain in the order in which they were left by him.

During the year 1832 the removal and re-arrangement were completed; and the College, it is believed, recognises to this day the work then done as of permanent value to the Museum—the system of arrangement adopted by MacGillivray being still adhered to.

The work thus accomplished by MacGillivray was specially acknowledged by the College in terms that leave no room for doubt as to its efficiency and value, as appears from many of its minutes. In a minute, dated 2nd August 1832, it is recorded that "Mr. Wood said there could be but one opinion as

to the general assiduity and talent which had been shown by the Conservator in the very arduous task of removing and arranging the Museum, which he had performed so much to the satisfaction of the College. He therefore begged to move that the sum of £50, together with the thanks of the College, be presented to the Conservator for the extra labour he had had in the matter."

At the next meeting of the College (13th August 1832), "Dr. Gairdner, President, in absence of Mr. Wood, proposed that his motion of 2nd August, regarding a grant of money and vote of thanks to the Conservator, be approved, as he believed it was admitted on all hands that Mr. MacGillivray was most deserving of this mark of approbation from the College, especially as the motion proceeded from the Curators of the Museum, who were best acquainted with the nature and extent of his labours and with the manner in which he had performed his duties. The motion was unanimously carried."

The subsequent minutes of the College afford abundant evidence of the extremely satisfactory manner in which MacGillivray continued to discharge his duties as conservator during the remaining eight years of his tenure of that office, never grudging time or trouble in the discharge of these duties in the manner most conducive to the interests of the College and to the entire satisfaction of that body.

His knowledge of comparative anatomy and of natural history the College recognised as being of

special importance in connection with his duties in the Museum; and by a minute of 21st March 1833 they authorise him to absent himself from the Museum on Saturdays, "for the purpose of enabling him to go into the country and give demonstrations on natural history."

A minute of 2nd August following bears that the Curators in their quarterly report to the College "desire to express their satisfaction with the state of the collection under their care and with the skill and attention by which the duties of the Conservator have been performed, and that it appeared to the Curators that, as he is at present engaged in preparing the catalogue, considerable advantage would be derived from his being enabled to spend three or four weeks in London for the purpose of inspecting the museums there. Mr. Brown moved, agreeably to the recommendation intimated in the report of the Curators, that the Conservator be sent to London at the expense of the College for the purpose of examining the museums there with the view of preparing himself to adjust the catalogue of the Museum belonging to this College, which motion was agreed to."

The minute of 12th November contains the following passage from the Curators' report:—"It will be recollected that the College, with the view to the preparation of the catalogue, gave permission to the Conservator to inspect the museums in London. He visited previously the University and Andersonian Museums of Glasgow, the collections of natural

history in Liverpool, and the Museums of Dublin and Bristol. In London he visited the various collections, taking such notes and drawings as may be of use in completing our own arrangements. He visited also the museum at Chatham. The Curators have every reason to be pleased with the industry and intelligence displayed by the Conservator in the tour which he has made."

The College approved of the report and agreed that the Conservator should have the use of a clerk to assist him in making out the catalogne.

Fortunately MacGillivray's journal of his tour of inspection of the museums has been preserved, and it appears to be of so much interest as throwing light on some of the more remarkable features of his character that it is included in this volume — passages which are merely technical or without general interest being omitted. Three or four weeks was the time allowed him by the College for the inspection, and it will be seen that he inspected the museums in Glasgow, Liverpool, Dublin, Bristol, and London—numbering twenty-four in all—and that he accomplished the whole of that work, including his various journeys, from the time he left Edinburgh on 4th September until his return on 29th of that month (three weeks and four days), although there was then no railway to quicken his transit except on a visit from Liverpool to Manchester and back; and it appears from the journal that he had gained all the information with regard to the different museums, the acquisition of which was the special object of his tour. The contents of the museums, the arrangement of the

preparations, the mode in which they had been preserved, labelled, etc., and their condition generally, were readily taken in by him in all their detail, as well as in their general features, and were noted for reference in connection with his own work. He learned much that was of special interest to him, although apparently very little that was suggestive of improvement on his own ideas of museum classification and arrangement. Indeed he comments very unfavourably on the condition of some of the museums he had visited, while others drew from him warm approval.

Besides his comments on the museums there is much in the journal of interest otherwise—his geological observations, his picturesque descriptions of scenery and of life, his general reflections, and his touches of humour, peculiarly characteristic of the man, all tend to enhance the value of the small MS. volume so neatly written in his own hand.

The minutes of the College all through MacGillivray's tenure of office in its Museum contain evidence of its entire confidence in him, and they repeatedly record its admiration and appreciation of his work. The Museum, during his ten years' charge of it, was kept in perfection of order and cleanliness, while much was added to it which enhanced its value. Every addition (not a few by MacGillivray himself) was at once put into the most perfect state of preservation, and was fitted into his scientific arrangement. Nothing was ever left out of order, and constant cleaning was rigidly carried out.

From a minute of the College, dated 31st March 1834, it appears that MacGillivray had then begun to give lectures on natural history, and he obtained special permission from the College to absent himself on Saturdays, "to admit of his giving these lectures and to have scientific excursions with his pupils."

There is an interesting and amusing paragraph in a minute of the College of 2nd August 1834, in which it is stated that the Curators in their report to the College "agree to a sentiment expressed by the Conservator that it has been noticed to him that *low* and *vulgar* persons can derive no benefit from visiting the Museum, but that it was obvious to him that such a collection is calculated to remove many of their prejudices and that without information all men would be *low* enough. Besides, he added, such persons are the least disposed to handle anything."

In a minute of 3rd August 1835 it is stated that the Curators reported that the catalogue was now completed, and that all the preparations then stood in the order of it, and it is added: "This work, so creditable to the College and so calculated to increase the usefulness of it, has occupied so much of the Conservator's time and attention, and has been so materially advanced by his assiduity and by his judicious arrangements as to merit some species of acknowledgment on the part of the College, and with this view the Curators recommend to the College to vote him a gratuity of twenty guineas, which was unanimously agreed to."

In the minutes throughout the remaining six years

there are frequent references to the condition of the Museum, which was always in the perfection of order and cleanliness, MacGillivray's predominating views as to museums being that the order should be strictly scientific, and that everything should be kept scrupulously clean. During his whole tenure of office he seems to have been allowed an almost autocratic privilege in having his views carried out, the result always being the entire satisfaction of the College.

At last the termination of his career as Conservator of the Museum seems to have come about rather abruptly. It is recorded in a minute of the College of 16th March 1841 that the President had received a letter from MacGillivray, informing him that he had heard from the Marquis of Normanby that he had been appointed to the professorship of "Civil and Natural History" in Marischal College, Aberdeen, and that he accordingly resigned the conservatorship of the Museum, as from the last day of April following, by which time he said he hoped it would be in perfect order for a successor.

The minute of the College of 21st April following bears that, on the motion of the President, Dr. Huie, seconded by Dr. Maclagan, the College "unanimously resolved to put on record the high sense which they entertain of the value and efficiency of Mr. MacGillivray's services as Conservator of the Museum of the College for the last ten years, and to convey to him through their President their sincere congratulations on his appointment to the professorship of Civil and

Natural History in Marischal College, together with their best wishes for his comfort and success in that new department of public duty."

Thus ended MacGillivray's career in connection with the Edinburgh College of Surgeons, in the course of which he had shown in a marked degree those qualities which specially fitted him for the higher sphere of usefulness in connection with the science to which his heart, head, and time had been so zealously and so exclusively devoted for upwards of twenty years; and then began the *fifth* and final period of his life's work.

His name had already become famous as an ornithologist by the publication of the first three volumes of his *History of British Birds;* but before referring specially to that final period, some account must be given of his other work during the ten years of his connection with the Museum.

These museum duties—constant and arduous as they were, and much as they occupied his time and thought—formed but a part of the work accomplished by him during that fourth period of his life. Besides his lectures on natural history, many contributions to scientific periodicals, including the article "Ornithology" to the seventh edition of the *Encyclopædia Britannica*, the editing of the *Edinburgh Journal of Natural History and Physical Science*, from 1835 to 1840, the editing of new editions of several books on natural science, writing a condensation of Alexander Von Humboldt's travels, the lives of eminent zoologists, *Descriptions of the Rapacious Birds of Great Britain*, published in 1836,

which he called his "first work," although he had previously published many original papers, translations, and compilations, "all in the way of business," as he says. He also during the same period wrote a *History of British Quadrupeds* for Jardin's Naturalist's Library, Manuals of Botany, Geology, and Zoology, and the first, second, and third volumes of his *History of British Birds*—his "great work," as he himself calls it by anticipation in the preface to the *Rapacious Birds*, the remaining two volumes having been issued only shortly before his death in 1852.

A further literary undertaking during this more than busy period had reference to Audubon's *Ornithological Biographies.* He wrote the whole of the scientific part of that work, and a complete synopsis of it. In addition to all his writing, he was also occupied in making those most truthful and finely artistic drawings of British birds in water colour, now in the British Museum.

The most important outcome, however, of the ten years' work consisted in the three volumes of the *History of British Birds*, to which the patronage of Her late Majesty had been graciously extended, and to whom the work was dedicated.

The object which he sought specially to accomplish in the publication of that work is explained by him in the preface to the first volume as follows, viz.—"The object I had in view when, many years ago, I commenced the observations recorded in this work was at some convenient season to lay before the public descrip-

tions of the birds of Great Britain, more extended, and if possible more correct, than any previously offered;" and in the preface to the *Rapacious Birds* he says: "Ornithology can be successfully prosecuted only by examining the internal structure, the external form, the actions and habits, the distribution and the various relations of the objects to which it refers;" adding, "all arrangements of birds hitherto published are merely artificial, inasmuch as in their details reference is had only to one or a few sets of organs." He further says he had not written without full preparation, having been at work for twenty years accumulating facts by his own observations in many fields, by numerous communications with other observers, by examination of many specimens, in museums and in his own possession, derived from various parts of the world, and by dissection of such birds as were available to him.

The publication of the *History of British Birds* formed the commencement of a new era in ornithology, and the result was to revolutionise to a great extent that branch of natural science. It was in accordance with the principles indicated in the above quotations that the book was written, and its value from a scientific point of view consists in its having been so. This work had the effect at the time of raising its author to the highest position in Britain as an ornithologist. In a subsequent part of this memorial volume several extracts from MacGillivray's works are given, in which he fully explains and vindicates the principles on which his system of classification, entirely differing

from the classification of previous ornithologists, was founded.

But since that time the advance in ornithology, in every aspect of it, has been enormous. Many have followed the line of treatment initiated by MacGillivray, and most writers, since the publication of the *Origin of Species*, have gone much further, in the light of the principles of evolution and natural selection. Every organ and feature of the bird, both internal and external, has been made the subject of the most minute examination, with results directly bearing on the principles of classification. These results and the present advanced stage of this most attractive branch of science are well and shortly explained in the recently published *Structure and Classification of Birds* by Mr. Beddard. Still the origin of the movement and the direction it has taken are due to MacGillivray.

He betrays oftener than once in his works a prophetic consciousness that, while he felt he was groping in the dark, the dawn of greater light was near; but how far he would have been able to accept the principles of Darwin may be uncertain. His belief in the separate creation of each species, and in its permanency as so created, appears to have been strong, when the introduction to the first volume of his *History of British Birds* was written. In it he says: "Species *alone* exist in nature," while "genera, families, orders, and all the mediate sections of a class must ever remain fluctuating;" and that while species "are more or less allied to each other, they exist in an order conformable to the

plan of their creation." His religious views, too, undoubtedly deep and sincere, were quite in harmony with his views as to the creation of species. He saw God everywhere in nature; and as his scientific knowledge deepened and widened, the more did the Creative Mind reveal itself to him in intelligent adaptation and design for the accomplishment of specific ends. Everything, as it existed, was to him the direct result of an original forth-putting of Creative Power and design, while his reverence for that Power increased as his scientific knowledge extended and deepened. Although the *form* of his religious belief, like the form of his poetry, was very much that of the preceding century, its reality and intensity were of his time, and peculiarly his own individually. Would his restricted scientific views as to species, with his form of religious belief, have prevented him from accepting the Darwinian theories of evolution and natural selection? Would he have been able, with his ardent love of truth and his capacity for clear insight into nature, to accept the Darwinian theory of evolutionary progressive creation in place of the view that all things were made at a beginning out of nothing, each species, age after age, simply reproducing itself, although subject to much and constant variation within its specific limitations?

It is not improbable that he would have got entirely over the then existing wall of separation between the past and the present of all scientific systems. Indeed, notwithstanding his views as to species indicated in the

above quotations, and his form of religious belief, there are passages in his *Manual of Botany*, published three years after his first volume of *British Birds*, which appear to show that his views had been undergoing a change, as in that work he says: "There is nothing absolutely certain as to species," that "species often pass into each other by gradations which render it impossible to draw a line of demarcation, and thus all species are more or less arbitrary;" while in his geological teaching he had quite abandoned those views as to creation which so hampered Hugh Miller to the last, and led to his fanciful theory of interpretation of the first chapter of Genesis. In the epitome of his lectures as dictated to his class in Marischal College, he says: "Species have not changed during historical times," apparently implying that they may have changed during longer prehistoric periods; and, again, in that epitome he says "the most perfected animals appear to have been created last," thus assuming that there had been successive creations—not one only, once for all. He was absolutely free from prejudice, always kept his eyes open, and constantly insisted on ascertained fact as the only legitimate basis of theory: while his love of truth and strict adherence to it formed, it may be said, the backbone of his life and of his work. He was eminently worthy of the Gaelic name he bore, "Gillivray"—servant of the truth; and the publication of *The Origin of Species* would probably have been hailed by him as the rising of a new sun in the heaven of science, and as bringing the light for which he had

been prophetically looking. He would probably have been able to see God's creative power in nature not less clearly and reverently than before—creative by a never-ceasing evolutionary process, a continual progressive unfolding of the essential being of all existences—an endless change and growth of organic form making clearer to him the full significance of those very principles of classification which he had already adopted, with a deeper insight into the facts of nature on which they rested, and which, through the mind of Darwin, had come to the scientific mind of the age as a new and great revelation.

But besides the scientific aspect of the *History of British Birds*, that "great work" has other features which will always preserve its interest and attractiveness to many readers who may be unable to enter intelligently into the author's scientific descriptions and deductions. The narratives of his excursions—often by night as well as by day; the difficulties encountered—at times with no little danger, especially while scrambling among the rocks of the Outer Hebrides, or climbing the cliffs of Ben Macdhui; his descriptions of scenery—now overpowering in its ruggedness and grandeur, and again tenderly soothing in its soft and varied beauty, amid which he wandered in the pursuit of knowledge of the habits and modes of life of his feathered friends, are often extremely fascinating, and all the more so when such scenes are enlivened by a solitary raven on its crag, or by a couple of sea eagles wheeling about on wing high above his hiding-place,

or by flocks of sea birds of all varieties wandering over a flat sandy shore, with the sea far out on a bright sunny morning, in search of their early meal, or by a grey and yellow wagtail, as seen by him on the banks of the Braid Burn one summer day while walking along its course. "How pretty and pleasantly thou runnest," he writes, "along the sandy margin of the brook. The pattering of thy tiny feet can be heard only by fairy ears; so light is thy tender frame, which vibrates as if thy joints were too delicate and thy muscles too sensitive for thee to fix them for a moment in rest. The gentle breeze, that scarce bends the young grass, curves the long feathers of thy tail, and the sudden blast sweeps thee away quivering and emitting thy shrill notes," etc. It concludes: "It is pleasant to me to gaze upon thee, thou marvellous epitome of mind and matter, so harmoniously organised." The passage is given at length in the latter part of this volume, and it will be seen how lovingly sympathetic it is throughout with the tiny creature, which for the time had completely drawn his affections towards it.

But every feathered creature, from the most powerful and relentless bird of prey to the smallest and most harmless of the race, attracted his sympathy as he found it in its native habitat and congenial surroundings.

Of the ravens at Loch Tulloch he says: "It is very pleasant to hear the ravens on the crags talking to each other in great variety of accents—one answering the call of another. Poor fellows! if the glen were mine

I would give strict orders not to molest them; for next to the eagle—now altogether destroyed—the raven is the greatest ornament of such a scene."

Indeed there was no bird to be found in all his wanderings which did not draw a warmth of sympathy from his kindly heart; and there are many passages in his book on British birds, which, for picturesque beauty, poetic feeling, or tender sympathy with nature and every living creature that came under his observation, can scarcely be surpassed. Yet he never allowed his sympathetic feeling, or his appreciation of the picturesque to interfere with his proper work as a scientific ornithologist. To learn the facts about the habits and lives of living birds was the main object of his many wanderings; and his power of imagination and sym pathetic susceptibility, in place of hindering, helped much, in his case, to the readier and clearer perception of those facts, and to his capacity for making them more vividly and attractively apparent to others—to the non-scientific as well as to the scientific.

There is another feature of the writer's mind of much interest, which betrays itself in many passages of his "great work," as well as in his other works —that is an ever-present sense of the deep mystery of Nature and of the limits of his power of insight, however much he had been able to see more than others of his generation. He was intensely worshipful at Nature's shrine—all his best thought and feeling often rising into reverential awe, and his heart overflowing with gratitude and thankfulness to the Author

of all that beauty and glory which constituted for him its supreme and abiding interest.

The illustrations in his *History of British Birds*, drawn by himself, and consisting principally of the heads and feet of birds, besides being scientifically accurate, are fine specimens of art, each being strikingly expressive of the character of the species of bird represented. As examples, nothing could be finer than the head of the golden eagle, or of the sea eagle, or of the raven, or the magpie.

But these illustrations, good as they are, come far short of his water-coloured drawings of birds in the British Museum already referred to. They are beautiful works of art, executed with great delicacy and care—in expression, in attitude, and in their natural surroundings, just as he had seen them with his own eyes. Yet they are little known outside the walls of the Natural History Department of the Museum. Modest as he habitually was, he did realise that there were things which he could do better than other people, and he spoke the simple truth when he said that, in his day, no one could draw a bird except Audubon and himself.

But besides his work as conservator of the Surgeon's Museum and all his own scientific and literary work, he undertook, as has been said, to aid Audubon in the preparation of his *Ornithological Biographies* for the press. He was introduced by Mr. James Wilson (Christopher North's brother) to Audubon when that eminent American ornithologist was arranging for the publication of his great work

in Edinburgh in 1830. Audubon writes in his journal, recently published by his grand-daughter, Miss Marion R. Audubon: "I know I am a poor writer, that I scarcely can manage to scribble a tolerable English letter and not a much better one in French, though that is easier to me. I know I am not a scholar, but, meantime, I am aware that no man living knows better than I do the habits of our birds; no man living has studied them so much as I have done, and, with the assistance of my old journals and memorandum books, which were written on the spot, I can at least put down plain truths which may be useful and perhaps interesting, so I shall set to at once. I cannot, however, give scientific descriptions and here must have assistance."

Thus Audubon wrote on 16th October 1830 in his lodgings, 26 George Street, his residence during all the time he was in Edinburgh.

The co-operation of Audubon and MacGillivray in the production of the *Ornithological Biographies* is thus referred to by Mr. D. G. Elliot in an address to the New York Academy of Sciences on 16th April 1893. He says: "No better or more fortunate choice could have been made. Audubon worked incessantly, MacGillivray keeping abreast of him; and Mrs. Audubon rewrote the entire manuscript to send to America to secure the copyright."

The late Dr. Coues, in his *Key to North American Birds*, second edition, 1884, says of Audubon: "Vivid and ardent was his genius; matchless he was, both in

pen and pencil, in giving life and spirit to the beautiful objects he delineated with passionate love; but there was a strong and patient worker by his side, William MacGillivray, the countryman of Wilson, destined to lend the strong Scotch fibre to the Audubonian epoch. The brilliant French-American naturalist was little of a scientist. Of his work, the magical beauties of form and colour and movement are all his; his page is redolent of nature's fragrance; but MacGillivray's are the bone and sinew, the hidden anatomical parts beneath the lovely form, the nomenclature, the classification, in a word the technicalities of the science."

Mrs. Audubon, writing from Edinburgh to her sons in America, says: "Nothing is heard but the steady movement of the pen; your father is up and at work before dawn, and writes without ceasing all day. Mr. MacGillivray breakfasts at nine each morning, attending the Museum four days in the week, has several works on hand besides ours, and is, moreover, engaged as a lecturer in a new seminary on botany and natural history. His own work progresses slowly but surely." The date of this letter does not appear, but it could not have been written during MacGillivray's earlier years as conservator of the Museum, as he must then have been fully occupied more than four days a week with the arduous and anxious work connected with the removal and subsequent rearrangement of the museum contents. In 1833, and again in 1834, he had, as already mentioned, obtained the

permission of the College to absent himself from the Museum on Saturdays only.

Audubon, in the introduction to the first volume of his *Ornithological Biographies*, published by Adam Black, Edinburgh, in 1831, says: "I feel pleasure in acknowledging the assistance I have received from a friend, Mr. William MacGillivray, who, being possessed of a liberal education and a strong taste for the study of the natural sciences, has aided me, not in drawing the figures of my illustrations, nor in writing the book now in hand, although fully competent for both tasks, but in completing the scientific details and in smoothing down the asperities of my *Ornithological Biographies*.

Again, in the introduction to the fourth volume, published in November 1838, Audubon writes: "With reference to a vast number of specimens"—which had been sent him from America—"an account of the digestive organs and trachea of these, generally concise, but occasionally of considerable length, you will find under the articles to which they refer in the present volume. Their anatomical descriptions, as well as the sketches by which they are sometimes illustrated, have been executed by my learned friend, William MacGillivray, who in the most agreeable manner consented to undertake the labour, by no means small, of such a task, and to whom those who are interested in the progress of ornithological science, as well as myself, must therefore feel indebted." There then follows a sentence in which he prophesies that the time is approaching when museums filled with stuffed skins

will not be considered sufficient to afford a knowledge of birds, and when the student will not only go forth to observe the habits of birds but to procure specimens for careful dissection, thus showing the effect of MacGillivray's teaching and example on a man who, although he knew much of the habits, lives, and exterior of birds, was "no scientist."

Audubon, on finally departing for America, left his son Victor to finish the work of publication, and he wrote to him as follows:—"You have my journals, all necessary facts, and in yourself sufficient ability to finish the letter-press with the assistance of our worthy friend, John Bechman, as well as MacGillivray."

From these quotations it is clear that MacGillivray's part in the preparation of the *Ornithological Biographies* must have involved much anxious, laborious and constant work, requiring the greatest care and judgment, over a period of eight years, and that work must have added much to his other constantly engrossing occupations. Yet nothing which came from his pen shows haste; and everything he did was done with patience, with care and with accuracy. Care, patience, and accuracy were elements in his nature which no circumstances, however pressing, could counteract or overcome.

His labours in connection with Audubon's work terminated in 1839, when the *Synopsis*, which was wholly prepared by him, was finished and published.

MacGillivray, as appears from many passages in his *British Birds*, appreciated much the warm friendship

of Audubon, and he frequently acknowledges his indebtedness to him for information and specimens which were of great importance to him in connection with his own work.

His book on the *Rapacious Birds of Great Britain* was dedicated to "John James Audubon, in admiration of his talents as an ornithologist, and in gratitude for many acts of friendship." Although the two men, as Dr. Coues says, were in most respects very unlike each other, they were both men of generous mind and warm heart, having common interests, with reference to which each was willingly helpful to the other, Audubon, no doubt, gaining most by the friendship, which greater gain was willingly and ungrudgingly conceded by MacGillivray to his friend.

MacGillivray and his family then lived at No. 1 Wharton Place, now no longer in existence, its site being occupied by part of the buildings of the Royal Infirmary. Their immediate neighbour was the late Mr. Fraser, the successor of Dr. Neill of Canonmills Lodge in his well-known, old-established printing business. The MacGillivray, the Audubon, and the Fraser families were on terms of close friendship with each other; and Mr. Alexander Fraser, Wimmera, Bruntsfield Place, Edinburgh, lately of Canonmills Lodge, son of MacGillivray's friend, who was then a boy, still remembers with pleasure the friendly meetings in one or other of the three family residences, and he specially mentions one such meeting

in Audubon's rooms when John MacGillivray (MacGillivray's eldest son), carelessly flourishing a stick, broke a glass case in which Audubon kept one of his ornithological treasures, to the great disappointment and annoyance of the naturalist. Mr. Fraser also relates how he, John MacGillivray, and John Audubon, then both lads like himself (afterwards eminent naturalists) were wont to go out on bird-shooting expeditions, when on one occasion they were caught in Ravelston Woods, rather roughly handled, and had their gun taken from them.

5.—Professor of Natural History in Marischal College and University, Aberdeen, 1841 to 1852—"History of British Birds" Completed—"Natural History of Deeside and Braemar"—Death.

As already mentioned, MacGillivray in 1841 entered on a new and extended sphere of eminent usefulness, as Professor of Natural History in Marischal College, Aberdeen, a sphere for which he was specially qualified, and which was altogether congenial to him. Then began, as has been said, the *fifth* period of his life. His chair included zoology, geology, and botany, this latter being a separate lectureship. All of these branches he had made subjects of special study, and had published, as mentioned before, a manual on each of them while

he was in Edinburgh. His scientific many-sidedness fitted in well with the varied character of his work in his new position, while that position at the same time afforded him opportunities for still further self-development in accordance with the bent of his mind and in the lines of his varied previous extensive acquirements.

In Marischal College he found himself in direct contact with many young inquiring minds. To instruct and to guide these was henceforth to be the main business of his life. He devoted himself to this work with all his energies, mental and physical, and with a warmth of sympathetic interest rarely found in the occupants of a professorial chair. There was earnestness and reality in all he said and did—in his lectures, in his excursions into surrounding districts, frequently with his students in search of zoological or botanical specimens, or for examination of geological phenomena. These excursions often involved long and fatiguing walks, but his youthful companions, inspired by his spirit, always felt that what they had gained in knowledge from discoveries made under his guidance, in instruction then received or illustrated, or in pleasure from his kindly and courteous companionship, much more than compensated for the fatigues undergone.

MacGillivray brought new life into Marischal College, while the specially interesting nature of his lectures and the attractiveness of his personality drew to his classes many students whose curriculum

did not include the subjects of his teaching. Even brother professors, unable to resist his magnetic influence, were not unfrequently seen on the benches in front of him. The late Professor Blackie, then occupant of the Humanity Chair in Marischal College, actually enrolled himself as one of his students!

An example of MacGillivray's wonderful aptitude for work connected with his chair, and of the rapidity, and at the same time careful accuracy, with which he was able to accomplish it, was the preparation and publication, within two years of his appointment, of his *History of the Mollusca of the North-East of Scotland.* That work includes, with very full descriptions, upwards of 300 species, all of which, except one, had, he says, been carefully examined by himself, while he had gathered two-thirds of them with his own hands—about twenty being new to science.

In the work of collecting he was aided by members of his own family, by students, and by friends resident in various parts of the adjoining districts, all of whom, inspired by him, were more than willing to contribute to his work any aid in their power.

In his preface to that book he remarks:—"I present it" (the book) "with confidence to the public, because I am conscious of having produced it with great care, and because I think it will be useful." It was intended, he says, for his pupils and persons commencing the

study of mollusca; and on that account, he adds, he had made the descriptions fuller than usual, as he was anxious "to induce them to go beyond mere nomenclature and to make themselves acquainted with the structure and relations of the objects described."

He further observes, with justifiable but modest pride and prophetic forecast, that it was the "first zoological work that has emanated from the University of which I am a member, and I cannot but look upon it as indicating the not distant dawn of an era destined, I trust, to produce investigations, the importance of which will tend to give our city a rank, certainly not yet acquired, among those distinguished for the cultivation of Natural History."

That prophecy has to a large extent been fulfilled, and there can be no doubt that it is mainly through his work and inspiring influence that it has been so.

MacGillivray occupied his chair eleven years, discharging his duties with the energy, intelligence, and independence of view which formed so essential features of his character. In the course of his many excursions and otherwise he accumulated a large collection of zoological specimens, which he arranged into an excellent private museum, with the capacity for scientific order which was so natural to him. That museum was used by him to great advantage as illustrative of his teaching, and it is now the property of the Aberdeen University.

His students always held him in the greatest respect, and many of them were warmly devoted to him. He was accustomed to treat them as friends; and one former student, recently referring to him, says: "I had a very great regard for him not only as an ornithologist but as a man. He was exceedingly *lovable* and undoubtedly the first ornithologist in Europe, and we were all proud of his fame. One thing always made a great impression on me: he treated his class as *men* and gentlemen, and we reciprocated his action. It was far otherwise with some of the professors." Another Aberdeen student of his day, but who was not in his class, lately a professor in a Canadian university, now dead, writes of him as follows: "He was about my own height" (rather below medium stature), "firm of step, erect of gait, as he trod the pavement of Broad Street or wound his way through the Gallowgate to the Old Town; great of reputation among British birds, and tireless, pedestrianising with his class among the hills and heather of Deeside. He could walk the most active of them into limp helplessness, and remain as fresh as at the outside of the march." "Keep your knees bent as you climb a mountain. You thus avoid having to raise your body at each step," was his advice to another student who had accompanied him in hill climbing.

Many others of his former students refer to him in similar terms of warm eulogy, those features of his character which appear to be most prominent in their

memory being his eminence as a scientist, especially in ornithology; the attractiveness of his lectures, with his happy mode of illustration; his readiness to undertake any work, however arduous, in the interest of his science or his class, and his specially kind consideration of his students.

In the words of the member of his class last mentioned, "his interest in the habits of his students was remarkable. If he saw a good student careless he would remonstrate with him privately; while earnest attention gained his favour. With his rapid power of observation he could detect even a temporary lapse from diligence. His lectures were carefully written out, and he dictated an epitome of them once a week. Now and then he gave out a subject for an essay, say 'The Sparrow,' and he indicated a preference for a paper bearing on its habits and life on the street and on the wing. As an examiner he was patient, tender, and gentle, unwilling to say an angry word. He would rather help out the hesitating student; but it was easy to see that carelessness was an abomination to him."

There appears to have been much in MacGillivray's considerate and kindly manner towards his students which strikingly accords with Dr. Barclay's treatment of him as his pupil. The two young men were evidently much alike in the essential features of their character, and in all probability the influence of the kind friend and dutiful teacher left an impress on MacGillivray's mind which time never effaced, and

which more or less influenced for good his whole after life.

In the autumn of 1850 he spent a holiday of about a month with his son Paul and his eldest daughter on a pedestrian excursion to the upper part of the valley of the Dee and Braemar, his main object, as he explains in his last written book, *The Natural History of Deeside and Braemar*, having been to examine the "geological structure of Braemar, its Alpine vegetation, and to a certain extent its zoology." Full details of that excursion and of its results are given in that book, which, besides its scientific value, is in several respects the most interesting and fascinating of his works. There is an unpretending simplicity in its style, while not a page is without interest, resulting either from the attractiveness of the personality of the narrator, as it comes out in connection with every detail, however trivial in itself, or from the pleasant surprise at the unexpected discovery of some Alpine plant, or the observed effect of a mass of eruptive rock as specially bearing on the geological character of the district, or from a strikingly picturesque view, or from an incidental reflective thought associated with the aspect of an object or scene which had specially impressed him, in which he gives utterance to his deepest thoughts or breathes out his most tender feelings or his holiest aspirations. There are more of such passages in that book than in any of his other works within the same compass. His sense of awe in the presence of the Great Mystery of Nature appears

to have been deepened. Religious thought had grown in him to greater maturity, and had come to dominate in a sense his science and his life, yet not so as to prevent him from seeing the facts of nature as he had always seen them or from drawing from them without bias the deductions which they appeared to him to warrant.

In his preface to that book he says: "If the Valley of the Dee has many a time been traversed by the wise and the learned, the man of science and the man of wit, the poet, the painter, and the tourist, it is equally instructive to the naturalist, *who ought in his own person to represent all these.*" In his case the ideal naturalist was realised, for he did combine all these characteristics in himself. He was eminently the man of science; he had the heart and the imagination of the poet and the painter, and he was the patient, plodding pedestrian tourist, easily accommodated with lodging and food wherever he went,—in his earlier days not unfrequently sleeping under the open canopy of heaven after supping on a piece of oatcake and a few mouthfuls of water from a spring.

It would do injustice to most of the finer passages in the book to attempt to quote them partially, but one —a very touching one, near the end, can be so quoted without such risk: "The Divine Providence," he says, "has rendered my path pleasant to me in the rugged corrie, in the thick wood, and in the green valley; has prepared friends to forward my views, to protect me under their hospitable roofs, and instruct me by their

conversation; has restored me to health and preserved it to me; has enabled me to accomplish the purpose of my journey, and filled me with gratitude now that I approach its termination."

It is believed, however, that although he felt at the time that he had benefited in health by the excursion, the fatigues to which he had subjected himself had been really detrimental to it. He became so ill a few weeks before the end of the College term of 1850-51 that he was obliged to relinquish his class duties for the remainder of that term, these having been undertaken for him by a former student, now the Rev. Dr. Farquharson, for the last forty-two years the much-esteemed (now senior) parish minister of Selkirk. MacGillivray was unable to enter on his class duties for the session 1851-52, and the same gentleman acted as his substitute again for the whole of that session. Accompanied by his eldest daughter, he went to Torquay for his health in the late autumn of 1851, and while there his wife died suddenly in Aberdeen in February 1852. On 8th March following, when still at Torquay, he published the fourth volume of his *History of British Birds*—just fourteen years after the issue of the third volume—and in the preface to it he makes the following very touching reference to his position at Torquay at the time: "As the wounded bird seeks some quiet retreat where, freed from the persecution of the pitiless fowler, it may pass the time of its anguish in forgetfulness of the world, so have I, assailed by disease, betaken myself to a sheltered nook where, unannoyed by the piercing blasts of the North Sea, I

had been led to hope that my life might be protected beyond the most dangerous season of the year. It is thus that I issue from Devonshire the present volume, which, however, contains no observations of mine made there, the scenes of my labours being in distant parts of the country."

The fifth and concluding volume of his "great work" was published on 31st July of the same year, after his return to Aberdeen, and on 8th September following he died in his residence in Crown Street of that city.

The "Conclusion" at the end of that volume is calmly but deeply pathetic. In it the writer says: "I have been honest and sincere in my endeavour to promote the truth. With death apparently not distant before my eyes, I am pleased to think I have not countenanced error through fear or favour. Neither have I in any case modified my sentiments so as to endeavour thereby to conceal or palliate my faults." The "Conclusion," from beginning to end, forms a most touching "Finis" to all his life's labours. It shows that he fully realised, in quiet, self-possessed consciousness, that the end of his life's work was near; and the great outstanding features of his mind—an unquenchable love of truth and profoundly reverential worship of the Creator of all that organic life which formed the subject of his untiring investigations—come prominently out in it. That conclusion is given fully as the final extract from his works in this volume, and it forms an appropriate ending to it.

It is difficult now to realise what Professor MacGillivray's loss to natural science then was felt to be —the loss of "the most eminent ornithologist in Europe," as he has been truly designated. The loss, too, of a man who was so devout, so generous, so self-denying, so warm-hearted, so painstaking, so energetic, and so conscientious in the discharge of duty and in the carrying out of any purpose to which he felt he had a call—who can tell what that was except those who had the privilege of personal relationship with him as scientists or as friends, or as members of his own bereaved family!

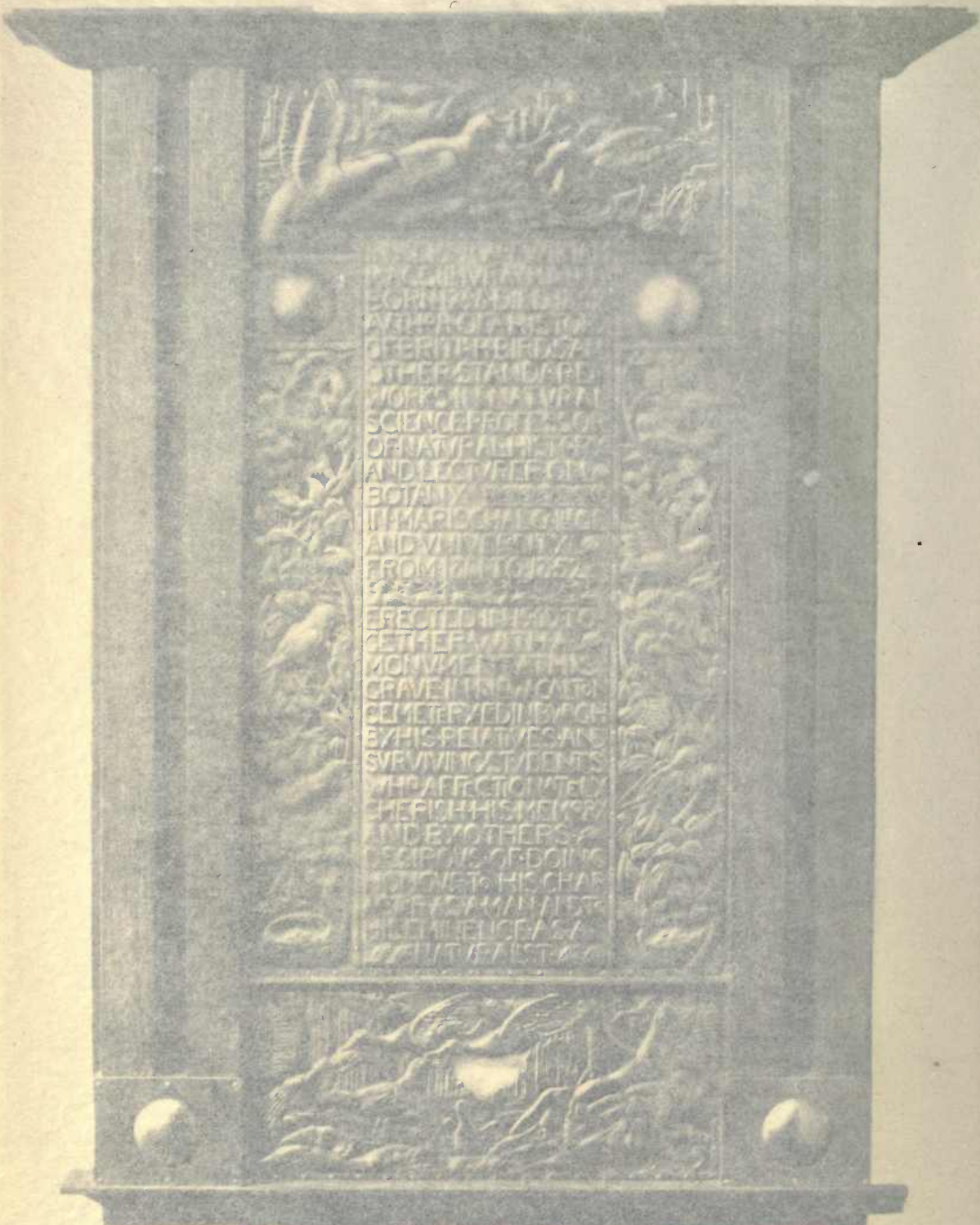
He had thirteen children, several of whom died in infancy or childhood. His two sons, John and Paul, became eminent in natural science. John was naturalist on three scientific exploring expeditions sent out by the Government, viz. (1) that of the *Fly*, commanded by Captain Blackwood, to Torres Straits and the Eastern Archipelago, to which he was appointed in 1842, when he was only eighteen years of age, and from which he returned in 1846; (2) in the end of the same year the *Rattlesnake* expedition, under Captain Owen Stanley (Professor Huxley, then an assistant surgeon in the Royal Navy, being also of the staff); and on his return from that expedition in 1850 he wrote an account of it, which was published in 1852; and (3) later in that year he was appointed to the *Herald* expedition to the coasts of South America and the South Pacific, under Captain Denholm. He, however, left the *Herald* on its arrival at Sydney in 1855, and thereafter devoted

his life to scientific explorations in Australia and the Pacific Islands. His constitution ultimately giving way from exposure and the fatiguing nature of his work, he died at Sydney in 1867. It is said that he left journals of his expeditions and work of exploration, including amongst much else the results of special observation and study of the habits of the aborigines. These journals, the writer has heard, are still in existence in Sydney, and there can be no doubt that there is much in them that would be of extreme interest to scientists as well as to many other readers. It is therefore hoped, if they do exist, that they will yet be permitted to see the light of day.

Paul also settled in Australia, and became an eminent surgeon, but latterly devoted himself almost entirely to natural science, and made a large collection of specimens, which is now in the Museum of Natural History, Melbourne. He died a few years ago, and a monument has been erected at Bendigo, his former residence, to his memory. A third son, who died early, also showed a strong predilection for natural science, and, had he lived, might, it was believed, have rivalled his two distinguished brothers. So that the love of natural science was strong in the blood of that family.

Dr. Donald William MacGillivray, a younger brother of the Professor, followed the medical profession. He was educated for it at the University of Edinburgh, living in family with his elder brother while attending the classes there. After taking his

medical degree he returned permanently to the Hebrides. He at first settled for the practice of his profession and for farming in South Uist, but the late Mr. Gordon, the proprietor both of South Uist and the Island of Barra, who entertained a warm friendship for him, offered him the tenancy of the large and important farm of Eoligary in Barra, to which he removed, and there carried on extensive and successful farming for many years, at the same time giving the inhabitants of the island the benefit of his medical advice gratuitously. He was much trusted and highly respected by the islanders, and indeed by all who had the privilege of knowing him as a friend or otherwise; and when he died at Eoligary in February 1886, in the seventy-seventh year of his age, he was much missed and sincerely mourned. He, like his eminent elder brother, was interested in the ornithology of the Hebrides, as is also one of his sons, Mr. William Lachlan MacGillivray, now of Eoligary, who has a fine ornithological collection there, and has made not a few presentations of birds and eggs of special interest to the Edinburgh Natural History Museum. The natural history blood therefore appears to run in that branch of the MacGillivray family also.



II

PRESENTATION OF THE MEMORIAL MURAL TABLET TO THE UNIVERSITY OF ABERDEEN.

AN interesting ceremony took place on Tuesday 20th November 1900, in the Natural History Class-room at Marischal College, when Mr. John F. White, LL.D., on behalf of the subscribers, presented to the Principal, as representing the University, a mural tablet to the memory of William MacGillivray, M.A., LL.D., Professor of Natural History and Lecturer on Botany in Marischal College from 1841 to 1852. Amongst those present were Principal Marshall Lang, Mr. John F. White, LL.D., Dundee; Lord Provost Fleming, Professors Cowan, Pirie, Trail, Cash, Dove Wilson, Reid, M'William, Hamilton, Nicol, and Arthur Thomson; Mr. A. W. Gibb, Lecturer on Geology; Mr. P. J. Anderson, Mr. D. R. Thom, Dr. Tait, Inverurie; Rev. Mr. Johnstone, Belhelvie; Dr. Polson, Mr. John Lyall Grant, Mr. James Duguid, advocate; Mr. A. M. M'Donald, advocate; Mr. T. A. W. A. Youngson, advocate; Mr. Alexander Macfarlane, late Collector of Customs; etc.

Principal Lang said—Ladies and Gentlemen,—You know the object of our present assembly, and I shall at once ask Dr. Forbes White, whom we are glad to see amongst us to-day, to state the object of the meeting, and address us in regard to that object and to perform the duty that he shall, in his graceful way, perform.

Dr. John F. White, who was received with applause, said — It is with some reluctance that I appear before you to-day to perform an important duty. The position I occupy should have been filled by the Rev. Dr. Mair of Earlston, Chairman of the MacGillivray Committee, and a distinguished graduate of our University, whom failing, by the Rev. Dr. Farquharson, late of Selkirk, the secretary and moving spirit of the movement, and the favourite pupil of Professor MacGillivray. But owing to the infirm health of both of these gentlemen, which I much regret, I have been asked to undertake the duty which they would have discharged much more efficiently. I do so, however, with sincere pleasure, as it gives me the opportunity of expressing my life-long gratitude to an honoured teacher, one of the three professors to whom I owe most. Professor MacGillivray was appointed to the Chair of Natural History in Marischal College and University in 1841, and died in 1852. During the last two years of his tenure of office his health broke down, so that his real work as professor was done in nine short years. Yet how much work did he crowd into this brief space of time! In winter

he lectured on natural history; in summer on botany. He made researches on foot over the whole of the north-eastern district, making observations in every department of natural science. He completed his monumental work on the *History of British Birds*, with several text-books and biographies of eminent naturalists and other works, and last of all his *Natural History of Deeside*—a goodly amount of hard, earnest work. He was buried in the New Calton Burying-Ground of Edinburgh, the city he loved so dearly, and in which he had done good work before coming to Aberdeen. Arthur Seat and Salisbury Crags seem to have been graven on his heart. It is somewhat discreditable to both cities that almost half a century has elapsed before any public honour has been done to his memory. Yet this delay has not been without its advantages. Fifty years have confirmed the impressions of his old students, and, further, have given us the approval of a younger race of naturalists. It is gratifying to us to know that none have taken a deeper interest in our movement than Professors Trail and Thomson, MacGillivray's successors in the University. Professor Trail has been untiring in his aid from the beginning. But still further, this long lapse of time has given a better perspective to MacGillivray's position. We see him in larger proportions — we now know that he was more than a great naturalist and fine teacher. His last work, the *Natural History of Deeside*, published by command of the Queen three years after his death, shows him to

have been a profound lover of Nature in its largest sense. In clear, nervous prose it reveals a fine poetic vein. He uses his word-palette like a landscape painter. There are passages in this book which for splendid yet sober description will compare not unfavourably with some of the finest passages in *Modern Painters,* and it must be remembered that MacGillivray's book was written, though not published, before Ruskin had surprised the world. Take, for instance, MacGillivray's splendid apostrophe to the upper reach of the Dee as seen from the old bridge at Invercauld, or his word-picture of the sunset over the moor of Glen-Gairn, or, again, for the effect of sound to which MacGillivray was peculiarly sensitive, listen to a wind-storm raging among the pines of Beallach Bhui, or, greatest of all, to the echoing and re-echoing of the peals of thunder in the corries of Ben Muick Dhui. In these numerous passages MacGillivray tells us that his descriptions were written in his note-book on the spot and at the moment, quick and vivid, thus showing his truly artistic spirit and his impressionable nature. In his drawings for the book we can see also how completely he combined his geological knowledge with a painter's feeling. In the very last words which flowed from his pen, at the close of his fine preface, he describes his ideal naturalist when he says—"If the Valley of the Dee has many a time been traversed by the wise and the learned, the man of science and the man of wit, the poet, the painter, and the tourist, it is equally in-

structive to the naturalist, who ought in his own person to represent all these characters." Here, with modest unconsciousness, MacGillivray describes himself. It is on these lofty grounds—of his all-round completeness—that he claims our admiration to-day.

But I must turn to MacGillivray's work in his class, and here I must notice how easily he attracted to his special subjects even those students whose bias lay rather towards classics and mathematics. For it was a noticeable fact that many of his best prizemen were not students of science, but of the other subjects. I do not know exactly whether it was owing to the magnetic influence of the earnest Professor, or whether it was that such students were attracted by the fresh study of Nature, hitherto to us a sealed book, but this I can say, that even the students of literature felt that there was no antagonism between the two pursuits, but rather that the one was complementary to the other. We felt that new powers were being awakened within us; that the hitherto dormant faculties of observation, comparison, classification, and generalisation were receiving a new stimulus. It is true that many of these students have drifted into other pursuits and lines of study, but the influence of MacGillivray's methods and spirit abides indelible. They are applicable to art as well as to science, truth in both cases being the ultimate aim.

MacGillivray's lectures were formal and precise, full of detail—perhaps overladen with detail, as I see from four thick volumes of notes taken by me in his class.

But as he always illustrated by specimens, even these details were not felt burdensome. He was perhaps the last of the race of all-round naturalists, though he had the accuracy of a specialist in many departments. Ornithology was his favourite, his strongest subject, of which the best proof is to be found in his monumental work in five volumes on the *History of British Birds.* He was also Lecturer on Botany, as well as Professor of Natural History, and his edition of Withering's *Botany* was practically a new work by MacGillivray. Though the botany class was not in the old curriculum, yet many arts students attended it, attracted by the personality of the lecturer. He was an excellent mineralogist, while his text-book on geology was abreast of the age. He was the first professor in the University to give a strictly scientific course of lectures on geology, a science which was then beginning to attract the attention of theologians. The *Vestiges of Creation* had appeared in the early forties, and clergymen attended MacGillivray's class in numbers to hear what science had to say in regard to the age and creation of the world. Professors came also; among others Professor Blackie, always eager for knowledge, enrolled himself as a student. In my own year, the late Principal Pirie, then Professor Pirie of the Theological Faculty in Marischal College, was a regular attender, and he gave a prize for a special examination in geology. But MacGillivray's activity did not end here. His *Manual of the Mollusca of the North-Eastern Counties* sent many classical and mathematical students twice or

thrice weekly to the Fishers' Square, Footdee, to complete their collections and to search for the rare specimens to be found in the baskets of the deep-sea fishermen. When there was difficulty in identifying the specimen from the manual, it was taken to MacGillivray. It was at times like these that MacGillivray was seen at his best. Holding the specimen tenderly in his taper fingers, and applying to it a lens, he would descant on the difference or want of difference between a variety and a species. These were the half-hours in which Matthews Duncan, Thomas Keith, and Charles Murchison received their first lessons in science, long before they took to the study of medicine, in which they afterwards became famous. It was then that the Rev. Dr. James Farquharson acquired early that knowledge which enabled him, when he had just taken his M.A. degree, to conduct for more than two years the classes of natural history and of botany during MacGillivray's last illness, and afterwards led him to take an active part in the work of the Berwickshire Naturalists' Club during his forty years' residence in Selkirk. It was under this sort of stimulus that Dr. Thomas Jamieson of Ellon threw himself into the geological studies which have since made him the recognised authority in Scotland in regard to the alluvial deposits. It was MacGillivray that led Andrew Leith Adams, son of the great Banchory scholar, to devote himself when a surgeon in the army to prolonged studies in natural history, studies which led to his retirement from the army to occupy a chair in Queen's College, Cork. In

this class-room there sat for many years the late Dr. Alex. Cruickshank, storing his mind with the secrets of the Nature he loved so well, the joy of his life. It is to these studies that the University and the city owe the munificent gift of our Botanic Gardens, presented by Miss Cruickshank in memory of her brother. I could give the names of many schoolmasters, such as James Anderson of Foveran, men who carried their love of natural science into their several parishes, studying the works of Nature themselves, and inculcating her lessons on their pupils. From such influences, carried further by MacGillivray's successors in the University, a wide-spread love of Nature has grown among working men, who in their various societies dignify their labours by such studies—a solace from hard manual toil.

There are still some persons left in Aberdeen who can remember the personal appearance of the man. Under medium height, spare in form, shy and reserved in manner, he walked swiftly along the street, generally alone, with his head inclined downwards and his eyes bent towards the ground, wrapt in his own thoughts. Celt of the Celts, he was singularly courteous and polite, with fine quiet dignity, but when offended he could use sharp words which left their sting. He made few friends, but once made he clung to them with tenacity. His life was in his work and in his home. There can be no finer proof of the beauty of his life than that every member of his large family laboured with him and for him, both sons and daughters, attracted to the work by love and sympathy. John,

the eldest son, became the naturalist on the *Rattlesnake* in the scientific voyage in which Professor Huxley also served. Paul made his mark in the *Flora of Aberdeenshire*, and afterwards in researches in Australia, where he died. While all the daughters assisted their father, special reference must be made to the two excellent pen-and-ink tail-pieces by Miss MacGillivray which adorn the "Deeside" volume. For delicacy and refinement they recall the work of Sir George Reid, *P.*R.S.A., and I can give them no higher praise.

Had sufficient money been at our disposal, we should have adopted the suggestion of Sir John Struthers and founded a gold medal in MacGillivray's memory in the University. But, failing in this, we have had to content ourselves with a monument at his grave by Mr. M'Glashen of Edinburgh, in fine Peterhead granite, about 9 feet high. The design would have pleased MacGillivray. Near the foot is a good-sized golden eagle, the royal bird much loved by the ornithologist, the extinction of which in the Scottish Highlands he deeply lamented. It fittingly suggests the lofty aspirations of MacGillivray. The eagle is finely executed in bronze by Mr. D. W. Stevenson, R.S.A., from a splendid drawing of the bird by MacGillivray himself, now the property of the British Museum. The monument is adorned with Celtic ornament, which befits the tombstone of our naturalist, who held that Gaelic was the most beautiful language in the world. In the centre is a fine Iona cross, symbol of the earnest faith of the reverent MacGillivray. The bronze tablet

is made by "The Guild of Handicraft" of London, from the design of Mr. Ashbee, whose work is well known. It is adorned with artistic representations of some of the flowers and animals which were the friends of the man whose memory we wish to honour. The inscription reads—"In memory of William MacGillivray, M.A., LL.D., born 1796, died 1852. Author of a *History of British Birds*, and other standard works in natural science; Professor of Natural History and Lecturer on Botany in Marischal College and University from 1841 to 1852. Erected in 1900, together with a monument at his grave in New Calton Cemetery, Edinburgh, by his relatives and surviving students, who affectionately cherish his memory, and by others desirous of doing honour to his character as a man and to his eminence as a naturalist."

At this point Dr. White unveiled the tablet, and briefly outlined its artistic features.

Dr. White, continuing, said—It is altogether a work designed in the spirit of the man whom we wish to honour, and we think and believe that in every respect it would have met with the approval of our friend. And now, Principal Lang, in the name of the subscribers, I hand over to your care this bronze tablet, to be set up in a fitting place in the University as a memorial of a great naturalist and distinguished professor. It represents also the hope of the subscribers that this tablet may stimulate future generations of students to follow in the footsteps of William MacGillivray and emulate his virtues.

Principal Lang said—Dr. Forbes White, on behalf of the University, I accept with gratitude the custody of the tablet which has been unveiled. I take it from you, for you assured me of this before I saw it, that both in its conception and in its execution this work reflects the highest credit upon the artist. But its merit is enhanced by its association with the name of one whose splendid service in Marischal College, whose devotion to natural science, and whose acknowledged eminence both as author and teacher have shed lustre on the annals of this ancient seat of learning. The biography to which you have so felicitously and tenderly alluded is inspiring, whilst it is also pathetic. Born in the old city of Bishops Elphinstone and Dunbar, the city whose *presidium et dulce decus*, next after the venerable Cathedral, is the Grey Crown of King's College—never did son of the north more admirably exemplify those qualities of persistency in purpose, of indomitable courage, of the surrender of the mere self-life to a selected aim, which have distinguished so many natives of the northern counties. What a picture is suggested in the tale of the young Aberdonian trudging on foot from Aberdeen to London, with a meagre supply of money in his pocket, a scanty wardrobe in his wallet—his wealth consisting, indeed, in his journal, in his copy of Smith's *Flora Britannica*, and in his own brave heart. The lad who could do that had in him the stuff of which heroes are made. And so, we follow him ascending rung by rung the ladder which, planted against the Hill of Difficulty, reaches to the place of

Fame. He succeeded, and he deserved to succeed. He who left his own city, a young Aberdonian, without wealth and without friends, returned to Aberdeen the Professor of Natural History, with a name among the mighty men, and with a great career stretching before him. For eleven years he taught and laboured—observing, classifying, studying, and writing; his the pen of the ready writer, and his the tongue ready like the pen. Eleven years only, and at fifty-six he was not. A long life was not his; yet, if we count time by heart-throbs, by feelings, not by figures on a dial, how much and how worthily had he lived! Some of his old students—two of them you have mentioned to-day—Dr. Mair and Dr. Farquharson—have been my warm friends; and the enthusiasm with which they recall his magnetic personality, his luminous exposition, his walks and talks as he led them afield, and showed them the things of interest and beauty about the paths they trod, is in itself a testimony to the manner of man he was. It is strange, indeed, that for forty-eight years the grave in the New Calton Burying-Ground in Edinburgh should have been left unmarked except by the two letters, W. M., on the low corner-stones. He did not need a monument. His voluminous works, placing him in the forefront of British naturalists, are a monument more enduring than bronze or even granite; and there is a suggestion of him in every trill of the little songsters which he loved, and whose ways and story he has so graphically unfolded. But why was it, we are tempted to ask, that those who knew him allowed nearly

five decades to pass before they originated an effort to express in some form their veneration for his memory? Well, is it not a striking evidence of the vitality of the affection with which his memory is cherished that you, sir, should, in the name of many besides, pay the eloquent tribute you have paid to him—and that we, many of us having no recollection whatever of him, associate ourselves with you in paying honour ungrudgingly and freely to the distinguished teacher, to the distinguished scientist, and to the man greatly beloved. It shall be the care of the University to guard the token of that honour which you have presented. And from the walls of this College it shall speak to generations to come of one whom all may follow in the love and service of truth; and following whom, "all may have, if they dare choose, a glorious life or glorious grave."

Professor Trail, who at the outset read a letter of apology for absence from Mr. Robert Walker, secretary of the University Court, said—I did not know Professor MacGillivray personally, but I have learned to know him in a way that, I think, perhaps not very many know him, through his works; and through these I have learned to revere the man and to love his memory, and to join heart and soul in the movement that has been carried through so far. I regret that we have not been able to provide—I will not say a more fitting memorial, but one that would have appealed more directly to the students to encourage them to follow in his footsteps. They will find it difficult to emulate him. While still

a student in this University, and after I had completed my medical curriculum, by Professor Nicol's wish I spent much time in the Natural History Museum, working over the collections of animals, many of which had been received unnamed, and required to be determined and prepared for exhibition. I also went carefully over the older collections, both of animals and of fossils, making good the damage sustained in the course of years. In this work I obtained a practical training of very great value, and was prepared to estimate the difficulty of carrying on such work with imperfect resources in books and other means of information, and while having to rely on one's own judgment. During my work I had occasion to become well acquainted with Professor MacGillivray's collections preserved in the Museum. The neatness of his writing and methods were conspicuous in all his work; but admiration of this was soon followed by respect and honour as I came to know more fully the width and accuracy of that work. From his collections I turned to his writings, to find only still stronger reason for wonder that he could have found opportunity to write so much, and on so widely different sides of natural science. But still higher rose my respect for his talents as I realised that he was no mere compiler, but that all he wrote showed that he had learned in practical study what he sought to teach. Unwearied industry at the command of great talent alone could have enabled him to do so much and so well. His manuals on botany and on geology show that his knowledge of these sciences was not that of a

mere amateur. They incidentally reveal that his beliefs on various questions were in accord with those now held rather than with those prevalent when he expressed them. For example, in his *Manual of Botany*, issued in 1840, he says—"There is nothing absolutely certain as to species, much less as to the groups into which they are disposed, as genera, families, orders, tribes, and the like. We merely agree to consider as species individual plants which closely resemble each other in the structure and form of their organs. Such species, however, often pass into each other by gradations, which render it impossible to draw a line of demarcation, and thus all species are more or less arbitrary. We know from observation that all assumed species undergo changes from climate, cultivation, and other influences; and individuals exhibiting remarkable alterations we call collectively varieties; but variety is a still more vague idea than species." He edited in one volume a reduced form of Withering's *Botany*. That this service to British botany was considerable was proved by numerous editions of the book in this form, each of those issued before his death being revised by him. His interest in botany and geology are further shown by papers published in scientific journals, and by one of his latest works, the *Natural History of Deeside*. But zoology was his favourite science; and his books and papers on branches of zoology are many and valuable. All come fresh to the student as the work of a man that tells of what he saw in language remarkable in style as well as in accuracy.

Throughout his writings one feels that he wrought his work not for fame or vainglory, but that that work was to him its own reward, and that he felt the power to perceive and in some measure to express the message to man that pervades the universe constrained him to communicate to others what meant so much to himself. In his writings one meets now and again a lament (the only one he makes, though for many years his life must have been a continued struggle with hardship and poverty), that so few will take the true and pure pleasure so freely offered to all, that so few think the study of the universe worth their attention or realise that through it they can learn more fully the power, wisdom, and goodness of the Creator of all. To him such study was a necessity of his very nature, as well as a privilege beyond price that he would fain have shared with all. He held that the whole world is holy and God's message is written everywhere—a message that he sought to aid all to interpret; but one seems to hear from him the burden, "Ye will not come." The introduction to his *History of the Molluscous Animals of the Counties of Aberdeen, Kincardine, and Banff* (a wonderful work to be the result of less than two years' search) gives a very vivid picture of his keen desire to advance the progress of scientific study, the best interests of education, and the honour of his University. No less does it show how he succeeded in enlisting the sympathies of his students and his pleasure in acknowledging their assistance. He speaks in it of "the pleasure of continually adding to one's knowledge, the sympathy of friends, the

invigorating influence of the many ramblings required, and the delight of aiding others in the same pursuits" as "amply sufficient to carry one through greater difficulties" than he had met with in the preparation of the book. He held strong views as to the claims of natural science to a place in education, and the need of freeing education from "the incubus of what would smother the mind that, if unrestrained, would inhale with delight the pure air of heaven." To him Nature-study in schools would have brought delight as the promise of a better state of education. I think that of him, as of few men, can be said—"Blessed are the pure in heart, for they shall see God."

Professor J. Arthur Thomson said — After the admirable and appropriate words we have heard, I find it very difficult to add anything. Yet I am glad to use the opportunity kindly afforded me, and I wish to say three things.

Without prejudicing an important question, may I say that just as gladly as the Principal has received this beautiful MacGillivray memorial on behalf of the University, so gladly would I in turn become its sub-custodian in the Natural History Department. I venture to hope that it may not be removed many yards, if possible not many feet, from the spot where we have seen it unveiled by Dr. White. A memorial should be appropriate and beautiful—and this is both; but it ought also to be a stimulus; and surely it is in the precincts of this class-room that its powers of stimulus should be tested.

Every one in Britain who cares much about birds does, in a real sense, know MacGillivray, for he left a lasting mark upon ornithology. May I explain in a minute why one says so. It is because, until 1837, no one in Britain had seriously tried to found a classification, or natural system of birds except upon external characters; while MacGillivray—a trained anatomist—got far beneath the surface and showed that a bird is not always, nor altogether, to be known by its feathers. My own opinion is of little moment in matters ornithological, but let me quote a sentence from *The Dictionary of Birds*, in which Mr. Alfred Newton, rather an unsparing critic, says—"After Willughby, MacGillivray was the greatest and most original ornithological genius save one (who did not live long enough to make his powers widely known) that this island has produced." It may be that the greatest merit of MacGillivray's "system of birds" was that it prompted a better one, yet we are here to-day respecting him because he tackled a big piece of work and did it well.

But, as has been said, there are many other reasons —beyond all ornithology—why we seek to keep his memory green. He was a fine type of the open-air naturalist, before the days of microtomes (and how he pours scorn on the "pompous ornithologist" who does not know what it is to climb and stalk and watch); he was a fine type of the all-round naturalist, holding to no petty distinctions between this science and that, realising the unity of Nature and the unity of Science, showing, for instance, in his *Natural History of Deeside*, that

botany and zoology, geology and meteorology, and human history besides, were grist to his scientific mill; he was a fine type of the local naturalist, as keen as Dr. Trail is for regional surveys, or the study of local faunas and floras, for science, like charity, begins at home.

MacGillivray had a great interest in the history of natural history, and wrote an interesting book thereupon. It is curious that one of his successors, the late Professor Alleyne Nicholson, did likewise; and that yet another has followed the same fascinating path. Some one has spoken of his independence, and of this and of his great good humour there is interesting evidence in a manuscript entitled *The Two Ornithologists* in the library, where he relates a real or supposed quarrel with Audubon, for whom he apparently did more work than he ever got credit for. As one looks at the memorial one cannot help remembering that MacGillivray was in a way an artist both with pen and pencil. His style is delightful; his handwriting must to many of us seem marvellous. It equals the memorial inscription in beauty, and excels it in legibility.

But I had almost forgotten the most important thing I have to say. MacGillivray was one of a grand body of workers who raised natural history (as he says without personal reference) from a position of contempt to the highest dignity. What was their secret? Was it not, in part at least, as MacGillivray says somewhere else, that Nature always reveals herself to those who approach her with humility and with affection.

Principal Lang said he thought they had had a very profitable, instructing, and stimulating afternoon, and before they parted he was sure that they would like to express their gratitude to Dr. Forbes White for coming from Dundee and for giving them his most interesting and beautiful address upon Professor MacGillivray.

Dr. White said it had been a very great pleasure indeed to him to have had any share in that meeting. He was extremely glad, as one of MacGillivray's oldest pupils, to have had an opportunity of expressing his deep debt of gratitude to him.

III

EXTRACTS FROM A TRIBUTE BY PROFESSOR MACGILLIVRAY TO THE MEMORY OF DR. BARCLAY, DATED 7TH APRIL 1820.

XI

My thoughts were gloomy, and I felt the wo
Of human kind press with a leaden weight
Upon my breast; yet I could not forgo
For aught of intellect that wilder'd state,
For it had left my heart reckless of fate;
And when the light of love flash'd on my soul,
Oh! then I felt of Rapture's power the height,
Equal to former gloom, and she was sole
Directress of my feelings, wild without control.

XII

Enough of this—enough is said to show—
Not that I am, forsooth, a wondrous wight
Who trod a path apart from all below,
And in the storm and lightning had delight,
The whirlwind's rage, and deepest gloom of night;

But that the name which hallows this rude song
Has been to me a blessing and a light
To guide me on my weary way along,
And lead to shady groves, their flowers to rest among.

XIII

A shipwreck'd mariner upon the sea
Of thought, scarce 'scap'd from the o'erwhelming wave,
That roll'd its mighty mass in frantic glee
Along perdition's gulf—scarce 'scap'd this grave,
I found me dash'd, and none at hand to save,
On Doubt's dark slippery rocks: he saw my state,
And brought relief; and though I might not brave,
As I had done, the wrathful scowl of Fate,
He cheer'd my soul, and rais'd my drooping head elate.

XIV

Friend to the friendless, he was all to me
That my fond heart could wish; and though no more
His friendly smile may wake my bosom's glee,
Yet shall his memory live within its core,
Unchang'd, 'mid feeling's change, the love I bore:—
For what is death, that it should rase the name
Which fond affection teaches to adore?
'Tis but the change of being, and the same
Kind feeling which we bore still urges its strong claim.

XV

He saw my follies, and reprov'd them oft:
Not in the galling tone of sullen speech,
But as a friend, in accents firm though soft,
Moulded alike to cherish and to teach,
Seeming than order rather to beseech.
My guide in Learning's arduous path, he cheer'd
My drooping spirits; then, as I would reach
Each little stage, and still a new appear'd,
Though hard the task, 'twas by his care and love endear'd.

XVI

The magic world which I had fondly made,
Each fancy-hammer'd link of that frail chain
Which comprehended all, living and dead,
Spiritual and of matter, of the brain
The misty mould, incongruous and vain,
He knew and smil'd: he smil'd perchance to see
How the fantastic wreath the luckless swain
With patient labour fram'd and cheering glee,
Which ne'er with sober Reason's precepts might agree.

XVII

But his, though 'twas the smile of irony,
Had nought of malice: universal love
And mild benevolence beam'd from his eye;

And his the feeling heart each pang could move
That human nature knew; "gentle as dove,
As serpent wise." If innocence might e'er
Be join'd to knowledge elsewhere than above,
The union in his soul might well appear,
O'er whose untimely fate I drop th' unbidden tear.

XVIII

Friend of my heart! who that e'er knew thy worth
Could hear unmov'd the melancholy tale?
There breathes not on this dark and dreary earth
A human being whom I love so well—
Save one[1]—and she, perchance, may sadly dwell
On thy lamented doom.—We scarcely know
How dear our friends, till the convulsive swell
Which heaves the throbbing bosom sadly show
That he for whom it rises mingled with its glow.

[1] This requires explanation. Having his mind entirely occupied with the idea of his departed friend, the author, at the time of composing this stanza, thought and felt that none could be dearer to his heart. This, however, it will readily be perceived, was rather a hallucination produced by feeling, than the result of a strict investigation of his affections. There are several whom he loves as well; but few whom he loves more. There are no other passages which require explanation or modification to show that they are legitimate. This explanation is made, not for the purpose of showing the author's regard to truth: for opinion and appearances, he thinks, he can treat with great contempt and disregard; but to prevent the possibility of fancying that exaggerations have been used in describing the character of his friend.

XIX

Friend of my heart! hast thou for ever fled?
Ah! fondly could my swelling heart believe
That he who now is number'd with the dead,
For whose harsh doom, though that of Heaven, I grieve,
Yet breath'd: but hope no longer may deceive;
And slowly mouldering in the silent earth,
The prey of death, now chill'd beyond reprieve,
Is that once glowing breast of truth and worth,
Which sympathis'd with sorrow, join'd in social mirth.

XX

Calm and compos'd, no passion's fiery sway
Left its deep furrows on his beaming face;
Grave without gloom, and innocently gay,
The smile upon his dimpling cheek would chase
The frown of wisdom; and although the trace
Of thought upon his placid brow was seen,
No harshness with it mix'd, but from the grace
Which beam'd in every feature you might glean
Knowledge of mind array'd in virtue's dazzling sheen.

XXI

Rich were the treasures of his cultur'd mind;
For Learning there her various stores had pil'd,
Glean'd from each mine of thought, drossless, refin'd,

Select and pure, o'er which even virtue smil'd.
Unlike the puffing pedant, he was mild ;
And, conscious of his worth, he spurn'd the glare
Which flippant Folly beams upon her child ;
The sceptic scorner's chair he would not share,
For virtue and religion claim'd his constant care.

XXII

Social affection glow'd for all mankind
Within that guileless breast ; and o'er his cheek
And in his eye beam'd sympathy refin'd,
Seeming, without the aid of speech, to speak
A soul all gentleness, holy and meek ;
And that diffusive love, thus clearly known,
Concentrated, when he would fondly seek
The charm of happiness among his own,
The kindred souls who shar'd his heart, intensely shone.

XXIII

Ah ! little know'st thou, darling of his love !
Who oft hast met his fond parental smile
With infant glee, which every smile could move,
And climb'd with panting haste his knee the while,
That he whose sorrows thou didst oft beguile,
The other source of all thy infant joy,
Who woke thy mirth with many a parent's wile,
Shall never guide the footsteps of his boy,
Nor on his youthful mind his anxious cares employ.

XXIV

Yet may the image of thy father's face,
By Memory's pencil dash'd upon thy heart,
In other years, when thou shalt fondly trace
Each lineament, the joy of grief impart;
And on the wings of Fancy thou shalt dart,
Beyond the farthest gleam of earthly ray,
To yonder mansions of the blest;—then start
To find thee guideless on life's wildering way,
And call upon the God who is the orphan's stay.

XXV

Alas, for her whom he has left behind!
What language may be found to speak her wo!
To paint the anguish of her wilder'd mind,
Writhing in agony beneath the blow
Of fate, which she was doom'd to undergo?
No, not the eagle eye of thought can pry
Into that bleeding bosom's core to show
Its chaos of despair, since burst the tie
On which all hopes of earth-born happiness rely.

A Copy of the following Lines having been found in Dr. Barclay's desk after his death, his friends have expressed a wish to have them printed, on account of the simile contained in them. For this reason, and not for any supposed intrinsic merit, they are subjoined; and with the more propriety, that they were composed by the author of the foregoing pages. They form part of an unfinished poem; and were suggested by a midnight walk on a sandy beach of one of the remote Hebrides.

The midnight hour,
Solemn and still, but placid and serene;
Calm as the pale and lovely face of Virtue,
When the glad spirit meditates her flight
From her material mansion, and the voice
Of Hope pours on the ear the melody of Heaven—
The smooth expanse of ocean, when the wind,
Wearied with blustering, sleeps upon its bosom;
The ripple of the wavelet on the shore,
Scarce loud enough to break the calm profound;
The dim-discover'd mountains of the east,
That overhang, in soften'd majesty,
The deep—oh! these have charms that well might woo
The contemplative mind to Midnight's bower.

IV

JOURNAL OF A VISIT TO MUSEUMS IN GLASGOW, LIVERPOOL, DUBLIN, BRISTOL, AND LONDON BY PROFESSOR MACGILLIVRAY IN 1833.

GLASGOW, BLACK BULL INN,
Wednesday, 4th September 1833.

HAVING been ordered by the Royal College of Surgeons of Edinburgh to proceed to London, for the purpose of inspecting the anatomical, physiological, and pathological museums there, I left the metropolis of Scotland at nine this morning, and after sitting four and a half hours on the top of a coach, arrived at Glasgow, the second city of that ancient kingdom. Finding myself somewhat benumbed by the cold, I took a stroll along the streets, and coming accidentally upon a large sandstone quarry, examined it *more geologorum.*

. . . . .

A little after three I went to the College for the purpose of visiting the Museum; but after ringing and rapping for a considerable time at the door of the latter, was obliged to retrace my steps, when I learned that the keeper admitted no person after three. Here then is my first lesson in the matter of museums, namely, to

admit no visitors after the hour of shutting; for a like reason, none before the regular hour of opening, and *a fortiori* none on shut days! Glasgow, however, must not have the honour of dictating to Edinburgh; and no man ought to follow an evil example.

In the afternoon I crossed the Clyde by one of the bridges, walked out into the country, observed that oat stooks are composed of twelve sheaves, wheat ones of fourteen; looked at everything, especially the ladies, who were all desperately ugly; recrossed the river, counted the steamers, and seeing some persons unshipping a cargo of limestone, took a specimen; traversed the city, walked into the Exchange, which to my taste is superior to any building in Edinburgh; returned to the Black Bull, took tea, read newspapers, and finally arrived at my bedroom.

On the way from Edinburgh to Glasgow I saw that the whole district consists of the coal formation, singularly broken up the greater part of the way by trap rocks, which consist in general of a dark *blue green*stone! Between Upton Hall and Bathgate these trap rocks form remarkable hummocks or rounded prominences, the examination of which would probably be interesting. In the greater part of the route the walls are of greenstone, as are most of the houses; but towards Airdrie, and from that to Glasgow, they are of sandstone of various tints and textures, very seldom red, however. In the city itself the houses are of sandstone, which is generally very much inferior to that of Edinburgh in colour and quality, but still sufficiently good.

Glasgow seems an immense receptacle of goods and provisions. I went out to look for a bookseller, and with difficulty found one—shop after shop interminably —cheese, butter, hams, hardware, tallow, haberdashery, drinkables, eatables, putonables, smokeables, snuffables, and a profusion of abominables, but, it would seem, very few readables, excepting bills respecting merchandise and steam navigation. However, it is a fine city, and doubtless as full of wickedness as fine cities usually are.

STEAM-YACHT "AILSA CRAIG,"
ON THE CLYDE SOMEWHERE BELOW GREENOCK,
Thursday, 5th September 1833.

Between nine and ten in the morning I called on Dr. Hannay, to whom I had a letter of introduction from Dr. William Thomson, and who engaged to meet me at the Andersonian Institution at one o'clock. I then proceeded to the College, whence I was, however, obliged to return, the Museum not being open. So I had recourse to Nature, as I often have had under more grievous disappointments, and betook myself to the margin of the city, where I observed, opposite to St. Mungo's Church, a monument-crowded eminence, the inspection of which promised amusement, if not profit. The little valley or hollow at its base showed strata of sandstone precisely similar to those described as having been seen yesterday. The hill itself is to be laid out as a burial ground, and is named the New Cemetery or Necropolis. On ascending I was somewhat surprised to find it composed, excepting at the western base, of a

rather large-grained greenstone, having dark green hornblende and reddish felspar as its components. On the south-eastern side is a very large quarry, which I afterwards visited.

The monument on the summit of this hill, which was formerly named the Fir Park, is a statue of John Knox elevated on a Doric column. The pedestal bears the following inscription :—

To testify gratitude for inestimable services in
the cause of religion, education and civil liberty
To awaken admiration
of that integrity, disinterestedness and courage
Which stood unshaken in the midst of trials
And in the maintenance of the highest objects
Finally
To cherish unceasing reverence for the principles and
Blessings of that great Reformation
By the influence of which our country, through the midst of difficulties
Has risen to honour, prosperity, and happiness
This monument is erected by voluntary contribution
To the memory of
JOHN KNOX
The chief instrument, under God
of the Reformation of Scotland
On the XXII day of September MDCCCXXX
He died rejoicing in the faith of the gospel at Edinburgh
on the XXIV of November A.D. MDLXXII, in the sixty-seventh year of his age

Well done, citizens of Glasgow, quoth I. Edinburgh has four statues, and Glasgow has four. Let

the world judge which of the cities has displayed most judgment and good taste.

Charles II.	John Knox.
George IV.	Watt.
Lord Melville.	Sir John Moore.
Burns.	William III.

. . . . .

At twelve I at length obtained admission to the College Museum.

In the front room are several stuffed skins of quadrupeds: a camelopard of rather small size, a zebra, a hyena, several species of deer and antelope, a lion and lioness, etc., most of them very ill-prepared, and in bad attitudes, with clumsy ununiform pedestals. They are, however, kept very clean, and have in general been good specimens. There are four recesses in the walls, filled with foreign birds and insects, ill-prepared and whimsically disposed.

In the room to the right are coins, medals, snakes, quadrupeds, all without order.

A collection of British birds, very clean and neat, but generally in bad attitudes. The beaks of two eagles were actually polished and varnished, and the legs and bills in general were painted, usually of tints unlike those of the parts in their natural state. The legs of birds ought never to be painted for obvious reasons.

Minerals.—A very large and fine piece of Labrador felspar, polished.

Left-hand room: birds and quadrupeds, fresh and in good condition, but generally ill-stuffed.

. . . . .

The whole Museum is more disposed for show than use, and the most egregious want of method is perceptible in all the rooms—I mean scientific method; for the articles are well disposed for effect and the whole place has a rich and finished look, the furniture and materials being good, and in sufficient quantity.

. . . . .

On the whole, I am much pleased with the Glasgow collection, but the materials, which are good, might be better arranged, and a great error common to most collections is that all sorts of things are gathered, and that they are laid out for show and not for use.

Dr. Hannay could not meet me at the Andersonian Institution, but sent a young gentleman, whom I found exceedingly obliging and polite, and who introduced me to Mr. Scoular, who is a keen zoologist. The collection there is contained in a large circular dome-roofed apartment, well lighted, and having a gallery. It consists of fragments of everything under the moon:—rocks, minerals, skeletons, fossils, skulls, stuffed quadrupeds, birds and fishes, reptiles in spirits, coins, antique pottery, plaster casts, human crania, skeletons of mammalia, etc.

The skeletons are horrible. There is one of a small elephant out of all proportion—all the rest are bad. All the birds and quadrupeds and fishes are ill-stuffed—yea, every one of them—at least I did not see one that was good. They are ill-arranged too. The people here may have science, for anything that I

know to the contrary, but they have no taste, no, not a particle. A dome is not a good place for a museum. Galleries are better. Nothing can be got to fill up the central space, unless one should erect a pyramid of elephants, megatheria, giraffes, and crocodiles.

There are materials for a good display, however. The zoological specimens are excellent, the minerals tolerable, the shells poor.

Dr. Hannay's friend then took me to the small room containing Dr. Hunter's anatomical and pathological collection—filth, dirt, and abomination; a few skeletons of quadrupeds, some skulls, and two or three hundred preparations in bottles, all disgustingly dirty and disorderly. A young Hibernian showed the wonders, himself not the least, yet a good sort of a lad, and smartly attired. I hope I shall not see many collections like them, otherwise I shall renounce the calling, and betake myself to geognosy, where, if there be confusion, it is confusion with design, or to botany, where all is beauty.

LIVERPOOL HARBOUR, "AILSA CRAIG,"
Friday, Saturday, September, 1 A.M.

We arrived here ten minutes ago. When I got up in the morning we were off Portpatrick. The land to the Mull of Galloway was rather low, bare, and uninteresting. The rocks along the water apparently granite along the whole coast.

From Air Point to Ramsay in the Isle of Man the land low and sandy. The banks vary in height to 80 or

100 feet, the highest eminence about 150. The highest mountain of the range, forming the elevated ground of the island, seems to be about 2000 feet high. I imagine it to be composed of slate. To the next point the rocks along the shore are of slate, probably clay slate.

ANGEL INN, CASTLE STREET,
LIVERPOOL, *Saturday.*

I left Glasgow by the "Ailsa Craig" steam-yacht at half-past four on Thursday. At Greenock some goods were to be taken in, and in the meantime I visited Dr. Turner and my old friend his wife. The evening passed right merrily on the Clyde, and at six in the morning, when we emerged from our dormitories, we found ourselves opposite Portpatrick. The sun shone gloriously all day; the sea was so smooth that it almost resembled the face of a plate of glass. When we reached the coast of Man, there was not a ripple on it, a circumstance which the captain remarked he had never seen before. The sun set gloriously, like a ball of fire, and in due time we had a clear firmament studded with stars. Jupiter blazed in the south-east, and the moon rose red like a volcanic fire over the Lancashire land, while the water, agitated by the paddles of the vessel, flashed and sparkled with phosphoric light. As we approached the mouth of the Mersey we passed a multitude of vessels, and took on board a pilot. The lights blazed over the smooth waters like meteors, and by their guidance we arrived in one of the docks at one this morning. At two I went to bed, and at six got up

again; but a drowsy man must necessarily be a dull writer, and so I proceed to extract my carcase from its investiture.

DUBLIN, *Tuesday, 10th September* 1833.

On Saturday I visited various parts of Liverpool, examined the docks and the geology of the neighbourhood, and, finding myself near the railway station, went to it and took a seat for Manchester at twelve. We arrived there at half-past two, after numerous stoppages by the way, for the purpose of discharging and taking in passengers. At Manchester I remained only half an hour, in the course of which I merely observed that the country belonged to the coal formation and new red sandstone, which is also the case along the whole of the railway. The journey back to Liverpool was performed in an hour and a half. Fine sections of the new red stone are presented along the course of the railway; and there are numerous quarries about Liverpool of the same formation.

On Sunday I heard a very excellent sermon in one of the chapels of the Wesleyan Methodists, and walked over a great portion of the western district of the town. The streets are generally narrow, and very irregularly planned; the houses of brick, and by no means remarkable for beauty. Most of the churches are of sandstone, red or grey, but several are of brick. As to these matters, however, they may be seen in the *Stranger in Liverpool* and elsewhere.

On Monday before ten I called on Dr. Mackintyre, to whom I had a letter from Dr. W. Thomson, and who gave me an order for the Zoological Gardens. He informed me that there are no anatomical or pathological collections in Liverpool, and that, being engaged, he could not at present accompany me anywhere. So I went to the Royal Institution, where I met with Dr. Murray and his brother, the former being engaged in delivering a course of lectures on geology. These gentlemen, with great kindness, showed me the Museum, which is contained in a singularly ill-disposed suite of apartments. The disposition, however, is worse as to effect than as to the distribution of the articles. There is an extensive collection of rocks and minerals, generally pretty good, the former deficient in character and uniformity. They are placed in square trays or boxes and are arranged in glazed tables, but they are by no means neatly disposed. The fossils are numerous and generally good. Quadrupeds, ill-stuffed—birds, wretched. There is not one specimen in a characteristic attitude, but they are pretty numerous. A painting by Audubon of the wild turkey, good. A portrait of Dr. Traill, not more like than it should be. Ancient paintings from Roscoe's collection; cast of antique statues; Ognia and Elgin marbles.

I am of opinion that the College of Surgeons of Edinburgh ought by all means to obtain casts of the Apollo Belvidere, Diana, Venus de Medicis, and a few others as specimens of the perfect form of the human body. There are a few Florentine wax casts; a considerable collection of skeletons and skulls of mammalia

and birds, fine corals, shells, etc. This, as usual, is an omnium gatherum museum. I say decidedly that everything is ill-arranged, the cases ill-constructed, the ticketing bad.

I then walked to the Zoological Gardens, which, although not extensive, are very prettily arrayed; and this kind of museum is assuredly much superior in every respect to a collection of stuffed animals—not that the latter can be dispensed with either.

. . . . .

At six left Liverpool by the Commerce Steam Packet for Dublin. The cabin passengers were in general of a cast much inferior to those of the "Ailsa Craig." The latter had an excellent library consisting of fifty or sixty volumes, including two Bibles. The former had only a volume of the *Spectator*, with cards and a backgammon table. The accommodation inferior, as well as everything else. The deck crowded with ragged Hibernians of both sexes, returning from the harvest. The weather was beautiful until twelve at night, when we were off the Point of Anglesey, and when I retired to my berth—Jupiter, numberless stars, aurora borealis, phosphorescent sea, etc., ships sailing towards the Mersey. There was a breeze and a good deal of rain after this. We landed at half-past ten at Kingstown, seven miles from Dublin, and I arrived at the latter city in a filthy car driven by a ragged and blackguard-looking Irishman.

The country about Kingstown is of granite, of which great quantities were lying at the harbour for exportation. The splendid public edifices at Dublin are of the same

material, but most of the private houses are of brick. The buildings and streets are much superior to those of Liverpool, and the Bank, University, and other places are magnificent; the streets, however, are not very cleanly, nor are the roads at all good, and the lower orders of the people are villainous in aspect, and disgustingly filthy and ragged.

I arrived in Dublin about twelve, and after taking a cup of coffee proceeded to the College, and thereafter to the College of Surgeons, where I found Dr. Houston, Conservator of the Museum.

The building is splendid, and has a fine situation in Stephen's Green.

The hall is a fine room, with an arched roof, of an oblong form.

The hall of the Museum is about ninety feet long and forty-five feet broad—that is by estimate. It is lighted solely from the roof, and has a gallery all round. The space below the gallery, which is too broad, is very dark. The skeletons are arranged in glass boxes or cases, on the floor, and on shelves, under the gallery, the central part of the floor being unoccupied save by a miserable glazed table, containing skulls and calculi. There is a considerable number of skeletons, but almost all most uningeniously articulated, and in the most preposterous attitudes. About six are excellent, however, viz. a horse, an alpaca, a nylghau, a lion, and one or two more skeletons of grampus, good. In this department almost everything is in the most wretched disorder.

Fine skeleton of boa and pike; a few tolerable corals; three very fine human skeletons — male and female European and male negro.

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The preparations are on the whole pretty well put up; but there is a most decided want of taste in the distribution of the articles, which, however, are placed in good order as to their nature—but science and taste must go together in museums.

It is a fine light room; but for a museum decidedly inferior to that of the Edinburgh College—excepting in respect to light.

Things in general *very dirty.* Dr. Houston scolding his assistant—but in fact the place is not yet arranged.

Fine fossil horns and bones of the Irish elk among rubbish, in a lumber room!

Dr. Houston says the members of the Edinburgh College of Surgeons are continually praising their museum, but for his part he leaves to strangers the praise which the Dublin Museum deserves. All I could say in its praise I said, namely that the apartment is light and elegant.

Dublin after all is a splendid city. The Irish dialect is detestable—to my ear. The people have a peculiar aspect, physically and morally bad. The lower orders have a decided taste for ragged great coats.

Wednesday, 11th September 1833.

Went to Dr. Houston's at eight, to breakfast. Met Dr. Evanson, a very pleasant person, who asked me the

name of a plant which some one had recommended as a diuretic. It was *Polygonum aviculare.* I told him the whole family to which it belongs is astringent. About ten I accompanied Dr. Houston to a Surgical Hospital, and afterwards strolled through the city, taking care to visit the filthiest parts, which, on the whole, are not nearly so bad as I expected to find them.

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At two I visited Dr. Evanson, who drove me out in his car, along with a friend, to the Phœnix Park, the Zoological Gardens, and a limestone quarry about four miles out of town. The gardens are of considerable extent and in a good position, being on rather high ground, with an adjoining hollow and pond fringed with *Typha minor* and other plants. They are laid out with much less taste than the Liverpool animals, and contain a smaller number of species. The collection, however, is good, and infinitely superior to a museum of five times the number. These collections will in time teach zoological painters the characteristic attitudes of animals, of which Audubon and myself are the only persons who have succeeded in attempting to afford an idea, in so far as regards birds. As to stuffed animals, they are altogether, entirely, and wholly absurd. I have not seen ten quadrupeds nor five hundred birds that were even tolerable. It is a difficult task to put up a skeleton of a quadruped, and still more to stuff the skin of one. Fools, who do not know the difficulty, readily find faults with the performance, and often see faults where

there are none. The quadruped skeletons of the Edinburgh College of Surgeons are on the whole well put up, but hardly one of them is perfect. The lioness is good — so is the elephant — and so are several others. Altogether they are a hundred times better than those of the Glasgow College, the Andersonian Institution, the Liverpool Institution, and the Dublin College of Surgeons. So far good. But if the Edinburgh collection were mine, and I had hands enough, and money enough to set them agoing, I could make it worthy of the nineteenth century. One of the members told me that the placing of bottles on a shelf is nothing. Truly, old one! any person with but one eye might discover that, although it is not everything, it is yet something which may be desperately mismanaged.

Museums with too many managers *must* be mismanaged. Who ever heard of any great exploit emanating from ten heads, although ten thousand hands may have executed it. Did a journal with *two* editors ever prosper? Could two Audubons have drawn the "Birds of America." If the ordination of the Museum should go contrary to my ideas, let it go to— the condition in which it was when I received it. I never seriously desired the appointment, never called on a member for his vote, did not even inquire when the election was to be, and do not now know who voted for or against me. Having undertaken the task, however, I am now interested in it; but, my boys, thwart a little, and you shall see that I can

do without you, just as well as you can do without me.

But, more seriously, I have never been so happy in any office, and that just because I have found the members gentlemanly, considerate, and kind—with few exceptions—two individuals only—and of these only one hollow. However, hollow or whole, no matter. I thank God that I am what I am; that although I have, and have good reason to have, a very low opinion of myself, I have yet been endowed with faculties the exercise of which will enable me, with the guidance and protection of God, to procure a proper share of the things that belong to this life. As to the next, I have confidence in God, that, having begun, He will accomplish.

So, as I was saying, the Dublin Zoological Garden is good, although it might be better.

The district around Dublin, *et infra*, is of a geological formation, which, for want of data, I am unable to determine.

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Thursday.

Was out at eight and walked along the southern canal, where I observed abundance of *Poa aquatica* and *Lycopus Europœus*, together with other more common plants. At nine went to Dr. Evanson's to breakfast, where I met a number of medical gentlemen, together with Pat Doran, the mineral dealer. One of these gentlemen, Dr. John Hart,

took me to the hall of the Dublin Society, chiefly to see the splendid specimen of *Cervus megaceros.* It is indeed a magnificent skeleton. There is a very extensive collection of rocks and minerals, occupying several apartments, but not well arranged, and numerous specimens in all the departments of zoology, together with Etruscan vases, antiquities, casts of statues, and various other articles. The disposition of the collections is bad, and the rooms are not very well adapted for the purpose, although they are by no means bad. I saw Gieseke's working room, his Greenland curiosities, and other articles. About twelve I set out in a car, accompanied by two of the gentlemen and Mrs. Doran, and, traversing the city, proceeded northward about seven miles, until we came to the Portmarnock Sands.

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At Bell Doyne dined—returned to Dublin by six, after a very pleasant ride. There were races to-day near Howth, and the roads were crowded with cars and other vehicles.

At seven called on Mr. Houston, but did not find him in, and at the College of Surgeons to meet Mr. Beauchamp (prond. Beecham), but did not see him, and in the neighbourhood on Dr. Evanson, who kept me some hours and sent out for some of his friends. I have not experienced more kindness anywhere than I have here, more especially from Dr. Evanson, who is a fine, frank, gentlemanly, rather dashing fellow.

On Friday was out by seven, took a place in the

Steam Packet for Bristol and was on board before eight, soon after which we started. It was at this time a dull rainy morning with a light breeze, which, however, presently increased to a gale, so that we were obliged to get into Kingstown Harbour, about seven miles from Dublin. It continued to blow furiously, but having abated somewhat, we ventured out again, and proceeded along the coast for several hours, when the captain, judging it impossible to make way against the wind and tide, ordered the vessel to be put round, and soon after we anchored in our former station. It blew furiously, with very heavy rain, until daybreak, when it began to moderate. At six we again set out and coasted along to Wicklow Head. The weather was fine, and the sea not so high as might have been expected. At seven we were off St. David's Head, and by nine were fairly in the Bristol Channel. The sea was high, and the vessel rolled at a fine rate, so that almost all the passengers were desperately sick, including two captains of the Royal Navy. I escaped, however, by keeping in a recumbent posture the greater part of the time. When I got up in the morning we were in the mouth of the Severn, and after passing up the beautiful river Avon, we landed at Bristol about eight. The scenery along this river is singularly splendid. I was delighted with the fine sections of stratified rocks, and the lovely woodland scenery interspersed with fields and villages.

GLOUCESTER HOTEL, CLIFTON, BRISTOL,
Sunday evening, 15th September 1833.

Here I am in the coffee-room of the Gloucester Hotel, where everything is at this moment very quiet, although the voices of some fellows tippling in a neighbouring apartment are making their way through the wall. I have finished three cups of tea and half a muffin. Opposite sits a tall Englishman—I know he is one, although I took no note of his speech. He has taken half an hour to his coffee and eatables, ten minutes to smacking his lips, five to picking his teeth, and as many more to humming, haing, or grunting, and is at present inspecting a newspaper. At another table is another person, who is similarly occupied—save the smacking, picking, and grunting. At a cabinet is a fourth looking for a book, and at a table is a fifth reading the *Times*, or basking in the rays of the *True Sun*. What a difference between this and the coffee-house of the Northumberland buildings in Dublin, where, while I was discussing my beefsteak and subsequent half-pint of vinum flavum and cup of tea, three Scottish men were quarrelling most obstreperously, one having given to another the lie direct. The affair ended in nothing, however, for the parties were evidently not *gentlemen*. The Irishmen present were peeping over the upper margin of their newspapers, and the eyes of all the waiters were directed towards the vulgar disputants. I do not exactly know how it is, but I do dislike Ireland and its inhabitants, and when

I arrived here to-day, I felt as if I had got among old friends. I was at least in the same island. The scenery here is truly English—an undulated country, highly cultivated, intersected by hedgerows, and interspersed with clumps of wood. As to the fissure, evidently produced by the disruption of the limestone strata, in which the Avon flows over its tortuous and muddy bed, it is only to be seen when you come close upon it. The views along this river are exceedingly beautiful, St. Vincent's rocks rising to a height of from one to three hundred feet. So far as I have observed, they seem to belong to the carboniferous limestone deposit, and are highly inclined. A conglomerate of the magnesian limestone lies over this deposit, in a hollow below St. Vincent's rocks.

GLOUCESTER HOTEL, *Monday, 16th September* 1833.

Rose at seven and walked down the river side, along the base of the cliffs which belong to the mountain limestone formation. I observed a very considerable number of plants unknown to me.

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Returned to the inn and took breakfast. To-day again the large Englishman. Two classes of men eat deliberately, and smack as they eat—the gluttonous and the dyspeptic, the former fond of eating for the pleasure which it gives them, the latter eating more than they are disposed to eat for the sake of the supposed benefit. This man is stout, healthy, and firm. He smacks, smiles at his meals, seems to have his whole soul in the

matter, eats and drinks deliberately, hums now and then to clear his throat, etc. Hogs smack at a great rate while eating. Smack, smack, smack—a most gentlemanly man too, *un homme superbe.* I would not live within hearing of that fellow for £200 a year in addition, and I feel tempted to wish I had one good crack at his chops. The glutton took half an hour to it too—chup, chup, chup.

The principal object of my visit to Bristol having been the inspection of the Museum of the Institution, I now went to that "elegant building," as it is called in the *Bristol Guide,* and introducing myself as myself to the keeper, obtained permission to examine and inspect. Nay, the good fellow accompanied me through the whole, showed and explained everything, and afterwards demonstrated the geology of the district from a hill top.

The collections are badly distributed in small rooms, the principal apartments being employed for other purposes—as reading-room, library, lecture-room, etc.; but they are extensive and valuable. Rocks, simple minerals, and fossils—fine specimens, capable of forming a very beautiful series, at present partially arranged; stuffed quadrupeds and birds, a considerable number, prepared in the usual style; some skeletons, good—a splendid one of a turtle—numerous skulls, magnificent Egyptian mummies, and all sorts of things, including a very beautiful "marble statue of Eve at the fountain," by E. H. Baily, R.A., purchased from that artist by the Institution for 600 guineas. There is a bad flaw in the right thigh, and two patches, one on the back; the

other on the right elbow. But overlook these defects in the stone, and if you do not consider the statue superior to many of the very finest antiques. For my part, I would rather have it than the whole Museum together, although the latter is doubtless convertible into more money, and more useful to the bargain.

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The Institution has only existed a few years, and yet the collection is already very extensive. Every collection that I see makes me regret the more our want of a decent series illustrative of comparative anatomy. The series of skulls of mammalia which we have is extremely contemptible; and we are equally deficient in most of the other departments. The collection ought to be extended or obliterated. As it is, it is in my opinion a disgrace to the College.

The keeper is certainly a very nice fellow, totally destitute of all affectation or assumption, apparently possessed of very considerable knowledge in geology.

After packing my movables, including myself, into an omnibus, which was large enough for its contents, seeing it contained only one individual, I proceeded towards Bristol, where I ascended a stage-coach bound for London. Soon after we were on our way to Bath, through which we passed in the dusk. The night was clear and rather cold, but towards three in the morning it began to rain, and continued wet until we arrived in London, which event took place between seven and eight. I was set down, quite benumbed, about eight at the George Inn, Aldermansbury, not far from St.

Paul's. So I made a partial shifting, a rude shaving, and a good breakfasting, and thereafter sallied forth. St. Paul's I had seen before; it did not excite much wonder. Strolling along I got to Waterloo Bridge, and inspected Hungerford Market, which latter afforded me a good deal of amusement. Soon after I went to the British Museum, which is at present shut upon its proprietors, the public. However I had a letter to Master Grey, and he being absent I presented it to his brother. He gave me permission to walk in, and when disengaged from Professor Lichtenstein of Berlin, then on a visit, showed me all the apartments in succession. It is unnecessary to describe this splendid and extensive museum, as there is a catalogue of it published. However, I have taken some notes.

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Montagu's collection of British birds, which is fine on account of its extent, but does not contain ten well-stuffed specimens. When are we to see some improvement in this art? Surely it were better to give an artist twenty shillings for a fine specimen than five for a bad one. Every stuffer has a way of his own in which he prepares all birds. In Edinburgh, Black John, and Carfrae, and Gibson have each a peculiar mode—every species has the same attitude. The late Mr. Wilson was a good stuffer of grouse, but he stuffed all birds in precisely the same style. The pervading style of Montagu's birds is distortion. There is not, so far as I have observed, one faultless specimen among them. Good collection of eggs. Montagu's shells in glazed tables—pretty good.

and fine, but not extraordinary. Mr. Nicol in Edinburgh has a much finer collection.

General collection of birds and shells. The former not remarkable for its extent, and miserable as to stuffing.

The splendid gallery behind is lighted from the roof, as are the two last rooms. The floor is of oak, the roof on the same plan as that of the Museum of the Edinburgh College of Surgeons, and having the same defects. The floor is already damaged by water. Who copied? or did both copy? The architects who have no genius make Grecian buildings.

There is another smacking Englishman in the coffee-room, and I am tormented by him. Smack, smack, smack! He is a sulky cur, too, and the waiter cannot please him. I almost wish he had a piece of album grocum in his cheek. But to proceed.

Two rows of tables—glazed, with minerals—very splendid, and beautifully arranged, although not yet properly named. They are laid on cotton, which covers a board, having a raised black margin. Now, it is pleasant to look at such an arrangement, although there are persons who care very little about the matter, and who would as readily put on their coat with the back before, provided it lay easily. Dr. ——— is of this character, and a member of the College of Surgeons.

Comparatively few of the articles in the Museum are yet named. The shells are generally placed on disproportionately large cards, and might with advantage be made to occupy less than half the space.

As to Cook's curiosities, and all the Hindoo,

Egyptian, and Grecian statues and fragments, I leave them to the curious in these matters. I can consider the Eve of the Bristol Institution superior to the whole.

I had letters to certain persons, and began to search for them, but found them not. However, I got my old and very excellent friend Dr. Grant, with whom I dined. We had a long crack. He complains desperately of the affairs of his college, his whole income for the last year not having exceeded £120.

It rained furiously as I was going home, and I did not find my way without some difficulty. London is an ugly wilderness. "My own romantic town" is the best I have seen after all.

The Portland or Barberini vase in the British Museum is much inferior to the model of it by Wedgewood in the Edinburgh University Museum. It is of blue glass, with white opaque figures. The model mentioned has a black opaque ground; that of the Liverpool Institution has a blue ground.

The hall for the Royal Library, 300 feet in length, is splendid. Two scoundrels in the room in which I write are damning and blaspheming, so I must leave them to their meditations.

Wednesday, 18th September 1833.

Having had no sleep on the way from Bristol to London, I remained in bed till near nine. After breakfast I went out, took a tortuous direction through the city, and arrived at Dr. Grant's, 10 Seymour Place, North, Euston Square.

Dr. Grant accompanied me to the London University in Gower Street.

Saw his own collection of comparative anatomy and zoology, which is contained in his lecture-room, and although consisting of a considerable number of articles, is not by any means fine, and certainly is not neatly kept or well arranged.

The collection of materia medica is in all respects excellent.

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The anatomical and pathological collection of the University is in a square room of moderate size, with a gallery.

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The preparations are very beautiful. The heads of the bottles are very neatly secured and painted in the usual way. The ticketing and numbering neat. Everything in excellent order, and cleanly. The whole has a finished and beautiful appearance.

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The room containing the apparatus for the natural philosophy class is also very neatly fitted up with large glazed cases, and the collection is excellent.

We went next to King's College, which forms the east wing to Somerset House, but the Museum was shut.

Went then to the Geological Society, in the vicinity. Models, casts, and specimens of various kinds. The principal part of the collection is arranged in presses fitted up with drawers. There is nothing particularly remarkable about them, excepting two circumstances.

1st. As geological and mineralogical specimens are liable to be much injured by dust, those contained in the drawers are secured by means of four sheets of paper fastened along the sides of each drawer and laid over the specimens in succession.

The method has several inconveniences. The articles cannot be inspected without taking out the drawer and laying it on a table. Then there are four awkward flaps of paper appended to each drawer. It would be much better to cover it with calico stretched upon a frame exactly fitting.

2nd. Each drawer in front has a small brass frame for the general label, which slips into it. The drawers in the Museum of the Edinburgh University are furnished with similar appendages.

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Then we visited the Museum of the Zoological Society in Bruton Street. The house is too small and inconvenient, and the Society are meditating a removal.

First room, small—square. Glazed cases, about 8 feet high, and 2½ deep. Movable shelves, supported by small square bars.

In this room is a fine collection of mammalia, the best stuffed that I have seen—extremely crowded. Dugong, camelopard and skeleton; oran outan, red, adult, and young—several black ones, etc. Skulls, horns, tortoises, snakes, etc., on the walls. Shells on a glazed table, arranged on cards of oak covered with paper.

Second room upstairs. Birds in very neat mahogany glazed cases. Shells movable.

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I did not succeed in finding the College of Surgeons, and coming upon Park Crescent and Square, I visited the Colosseum in the Regent's Park. The Panorama of London, for the exhibition of which this building was erected, struck me as being the grandest feat of art which I have seen. The deception was to me quite perfect. The saloon for works of art I found also highly interesting. The other appendages, viz. the conservatories, caverns, and Swiss cottage, were very pretty and amusing. The "African Glen," containing stuffed animals, I thought inferior to everything else, although interesting to a zoologist.

I then visited the Zoological Gardens on the north side of the Park. They are laid out with great taste, and contain a very large collection of animals disposed in suitable habitacles. If I had time, I should find it very instructive to study the attitudes of the animals, especially the birds. To the zoological painter collections of living animals must prove of the greatest importance. It is in fact utterly absurd to draw from stuffed skins.

Thursday, 19th September 1833.

Went in the first place to the Excise Office, where I found my old friends Mr. Murray and Mr. Linning, both of Edinburgh. Mr. Linning urged me to remove to his house, and remain a week or so in town, to see the museums more leisurely. I then went to Lincoln's Inn Fields, and delivered my letter of introduction to Mr. Clift, who informed me that the Museum was shut, and

that although I might have a glance of it to-day, I should have a better opportunity of seeing it to-morrow. So I crossed the river by Waterloo Bridge, walked through part of Surrey, and came upon St. Thomas's Hospital, where I was informed that the Museum could not be seen.

At Guy's Hospital I did not find Dr. Hodgkin, to whom I had a letter, but introduced myself to the keepers, and was allowed to inspect the museums.

The anatomical and pathological collections are principally contained in an oblong elevated apartment, lighted from the roof.

On the floor a skeleton of the hippopotamus ; another of the elephant—both fine, but the latter small.

Four tables—on one of which are wax models of the brain, neck, face, thorax, etc., extremely beautiful.

On the other three tables a most beautiful series of wax models illustrative of cutaneous diseases in glass shades and bottles.

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I then visited the Museum of Comparative Anatomy, and the Obstetrical Museum, which are kept in the rooms of two small dwelling-houses, by no means adapted to such a purpose.

Skeletons of quadrupeds, birds, etc., in general very good, and beautifully prepared. The artificial cartilages of the ribs are very beautifully made, painted white—splendid skeleton of a snake about eight feet long. This collection, however, is not extensive.

The obstetrical collection consists of models and preparations.

On the whole, the collections are in excellent condition, the materials are of the best quality, and the models and casts are splendid. The apartments might be better adapted to the purpose of a museum; but the collection may safely be called one of the finest in Britain.

After visiting Guy's Hospital, I repaired to Mr. Linning's, where I dined, in company with Mr. Murray and a Dr. Campbell, Miss Linning and Master Linning. We had a very pleasant evening of it. On returning to the city, along with Mr. Murray, I went to his lodgings, where I remained nearly two hours, and had a long crack.

Friday, 20th September 1833.

Called on Mr. Stanley, 12 Lincoln's Inn Fields. Then went to the Museum of the Royal College of Surgeons—otherwise called the Hunterian Museum. Saw Mr. Clift, who began to describe certain objects, but finding him much too prolix, I took a convenient opportunity of slipping away, and examined for myself.

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This splendid collection presents an example of a museum overstocked, there being materials for furnishing three apartments of the same size.

Some of the stuffed animals, skeletons, bones, and horns, horribly dirty. The walls and roof also dingy with dust.

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It is impossible to offer any detailed description of the Museum, for which reference must be made to the

printed catalogue. It is a magnificent collection, and the room is fine; but everything is so crowded that there is more appearance of confusion than of regularity, and there is more dirt everywhere than there ought to be.

Excepting the Museum of Guy's Hospital, that of the London University, and that of the Glasgow College, I have seen none approaching to our own in cleanliness.

After leaving the Hunterian Museum, went to Mr. Linning's, where I dined. Returned as usual to the George Inn, Aldermansbury, in the coffee-room of which I now am, absolutely smoking with perspiration, caused by three cups of tea, and an atmospheric temperature of eighty degrees.

Saturday, 21st September 1833.

Having been entrusted with three letters for Sir James MacGregor, I proceeded after nine to Berkley Street, which I reached about twelve, after having strolled about in the Park and elsewhere. He had not yet arrived at the office, so I left the letters and my card for him, and returned towards "the City." By the way left a letter at Mr. Gould's, Broad Street, Golden Square. He is a celebrated preparer of objects of natural history; but he being out, I had no opportunity of seeing him. Some of his performances, however, I had seen in the Zoological Society's collection, and they are highly creditable. After this, I examined the Museum of King's College, which is open to the public every day excepting Wednesday. It is contained in two rooms—a large and a smaller. These apartments are well adapted

for the purpose. They are plain, without the encumbrance of *ornamental* columns, pilasters, and all the rubbish that usually *disfigures* museums, and are lighted from the side, which is obviously the best mode of lighting.

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The anatomical and pathological preparations are good, and being fresh and neatly put up, look exceedingly well. There are a few good skeletons of animals, and a number of excellent casts and models of cutaneous diseases, etc. These models are inferior only to those of Guy's Hospital, if indeed they be so. The person who makes them is Mr. W. Tuson, anatomical modeller, King's College. The stands of the skeletons are tolerable, but as usual they are deficient in uniformity. I have seen none at all approaching to our own in neatness and just proportion.

I had a note from Mr. Stanley to Mr. Partridge, and that gentleman, the curator, and the modeller were very attentive to me. The numbering is on the lower part of the bottles: black figures on a white ground.

On leaving King's College I went to the Excise Office, whence Mr. Linning accompanied me to Bartholomew's Hospital, where I found Mr. Stanley, and had the remarkables pointed out by the keeper of the Museum.

It is small for such an establishment, in a single oblong apartment lighted from the roof. There is a narrow gallery. The cases are open, run along the

wall, have movable shelves, and are of convenient height, especially those of the gallery, which are about 7 feet in height. The collection is confined to human anatomy and pathology—the latter below, the former in the gallery. The anatomical series is not extensive. The preparations are put up in the usual manner, and with the ordinary degree of neatness. Some of the bottles, containing objects whose colours are liable to fade, are enclosed in a movable cylinder of blue pasteboard. This is the only place in which I have seen this contrivance employed.

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After inspecting this museum, and visiting the dissecting room, etc., I accompanied Mr. Linning to Lloyd Street, where I dined, and whence I returned after eight.

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Under existing circumstances it is impossible to examine objects in series. Were a person disposed to study healthy and diseased structure from preparations, he would find ample opportunities in the museums here, and in the department of comparative anatomy. The Museum of the College of Surgeons would alone furnish objects, the proper inspection of which would take many months.

With respect to the osseous system of animals, there is certainly a most extensive series in the different museums taken together. This is also the case with respect to teeth, horns, hoofs and claws. The Hunterian collection exhibits all the other organs in series more or less complete.

As to zoology, properly so called, there are also abundant materials.

Mammalia, between the Zoological Society's collection, the British Museum, and the Hunterian—a very extensive series.

Birds in the Zoological Society, British Museum, etc.

Reptiles in abundance.

Fishes less complete, all the other departments in one degree or other.

After all there cannot be a perfect naturalist who has not studied long in the metropolis; but study there will not of itself make a naturalist. Yet museums are evidently indispensable.

I have seen no good collection of insects, but there are many private ones in London.

In mineralogy the British Museum is almost complete; but one cannot study this science without being allowed to handle the specimens.

For the geologist, the Geological Society's collection and the organic remains in the British Museum and elsewhere.

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Sunday, 22nd September 1833.

Having slept too long, I was not out in time to go to the Scotch Church, near the Regent's Park, where I had engaged to meet Mr. Linning, so I went to St. Paul's. The interior of this building, I think, must strike a stranger more than its exterior. After morning service I crossed the river by Southwark Bridge,

on which I found Mr. Murray peripatising. I proceeded eastward with the view of taking a walk into the country, it being a beautiful day, but an omnibus coming up, I went *upon* it, and was conveyed to Greenwich, of which I visited the magnificent hospital, saw some of the old boys at their dinner, entered the painted hall of King William's building, inspected the representations of naval heroes and battles, and listened for a few minutes to the demonstrations of a respectable-looking personage with a long white rod, until he began to show that "now, the four corners of that great square represents the helements," when I marched out, entered the park, ascended the hill of the observatory, and after a pleasant walk among the fine trees, emerged into Blackheath. I then proceeded along the road, over Shooters' Hill, and down its eastern side, until I had arrived within two miles of Dartford, when a coach came up, and I got upon it. We arrived at Chatham about six.

In the whole course of this ride I had abundant opportunity of seeing what I had never seen before, a chalk district. Immense excavations have been made, and the road in many places has been cut deep into the deposit, exposing the strata of chalk, interspersed with black flint, and nearly horizontal.

Beautiful views of the Thames, covered with shipping, occurred at intervals; and at Rochester the scenery is fine, the Medway, the splendid old castle, the city, the ships in the river, the chalk cliffs, and other interesting objects presenting themselves in succession.

The diluvium on Blackheath and elsewhere consists of sand and pebbles of black flint, which are used for making the roads. The country is very beautiful, flat, or gently undulated, and more profusely wooded than I should have expected. About Chatham the ground is more undulated, but the chalk strata are still nearly horizontal, the valleys having apparently been produced by diluvial excavation. The houses in the towns and villages are built of brick, but are neat, and the people everywhere seemed in the most prosperous condition, even the labourers being remarkably well clothed and "looking like their meat," as people say in Scotland. I was surprised at the great number of very elegantly-formed and graceful young women. The features of the inhabitants are more regular and less weathered (as a geologist would say) than those in any part of Scotland. The men are, on the whole, stout and independent-looking. They are not lumpish either, as in Lancashire and elsewhere, but rather active.

I have not met with an instance of incivility since I entered England; but I have the same to say of Scotland and Ireland—although sometimes, particularly by clerks in offices or shops, one is answered by a single word.

From half-past ten, when I went to bed, to near five, I was tormented by bugs, which bit in all directions: right and left, over the face, neck, arms, back, and legs, not even sparing the crown of the head. As I had no oil, which is a specific, I was obliged to use the tallow of the candle to rub the bitten parts.

Monday, 23rd September 1833.

After breakfast I called on Mr. Dadd, apothecary, to whom I had a letter from Mr. Hay, and proceeded to Fort Pitt, where I found Dr. Clark, to whom I had a letter from Dr. William Thomson. He introduced me to Dr. MacCrae, Curator of the Museum, who forthwith accompanied me to it. It is contained in two apartments of the ordinary form, fitted up with cases ranged along the walls. The preparations are good, and minute and accurate cases are kept of those made from specimens obtained in the hospital. There is a very extensive series of national skulls, of which I am informed there are many duplicates, which may be given in exchange.

. . . . .

The cases are rather high, but on the whole this museum is in good order, although not very extensive.

Mr. Robert Jameson, Professor Jameson's nephew, now made his appearance, and accompanied me to the Natural History Museum, of which he has temporary charge. It is also contained in two apartments, fitted with open and glazed cases along the walls, having fixed shelves.

There are also glazed tables on the floor. The collection, although not extensive, is very good. The arrangement is not perhaps the best. The birds are kept as skins merely, which is a good enough way. A good collection of reptiles; and in general more or less in every department.

I then accompanied Mr. Jameson to the dockyard at Chatham, ascended a 74-gunship in process of building, examined the chalk section on Chatham Hill, looked into the Chatham Museum, went round Fort Pitt, took some refreshment, and proceeded in an omnibus to

The Museum. It is a general collection; but the most remarkable objects in it are the fossils of the chalk formation. It is small, and contained in a narrow and shabby-looking apartment. There is a good collection of birds, so far as it goes, contained in glazed cases or boxes.

The weather continued fine. I had lost the regular conveyance; but getting into a small omnibus I proceeded to Gravesend, where I had not remained ten minutes when an opportunity occurred of getting to London, and at ten o'clock I was set down at Charing Cross. So I presently got to the George Inn, supped with a Cornish gentleman of very pleasing manners, wrote part of my notes, and after some annoyance from a drunken party bawling in an adjoining room, fell asleep.

. . . . .

It may now be proper to make a general review of my proceedings in London, and a prospectus of what is to be done.

I have visited:—

Museums of the London University.
Anatomical Museum of King's College.
British Museum.
Museum of Zoological Society.

Museum of Geological Society.
Zoological Society's Gardens.
Museum of the College of Surgeons.
Anatomical, Pathological, Obstetrical, and Natural History Museums of Guy's Hospital.
Anatomical and Pathological Museums of Bartholomew's Hospital.
Colosseum and African Glen.
Pathological and Natural History Museums at Fort Pitt, Chatham.
Museum of the Chatham Institution.

I have called on :—

Dr. Grant. Mr. Stanley. Mr. Clift.
Mr. Owen—not in town. Mr. Gould—not in town.
Dr. Hodgkin—not at home. Sir James MacGregor—not at home.
Mr. Linning. Mr. Murray.

The following business to be transacted :—

To see the Museum of St. Thomas's Hospital.
To see Mr. Heaviside's Museum.
To see the Museum of the Linnean Society.
To call with letters on :—
Dr. Carswell. Dr. Tweedie. Mr. Scott. Dr. Hodgkin.

Tuesday, 24th September 1833.

Went to Dr. Hodgkin, 9 New Broad Street, who advised me to make another visit to Guy's Hospital to-morrow, and gave me a letter to one of the surgeons of St. Thomas's Hospital, Mr. MacMurdo, and to the proprietor of Heaviside's Museum, so I went to MacMurdo's, but, not finding him, left my letter with his wife. I then went to Heaviside's Museum, but the old boy was busy, and rather pettish, and could not

show it. I then travelled westward, called at Dr. Tweedie's, 30 Montague Place, Russell Square, but did not find him, and so left my letter with Mrs. Tweedie. Then went to Dr. Carswell's with a letter from Dr. Thomson—found him and delivered my letter. Then went to Mr. Linning's, where I dined. In the evening wrote a letter, and arranged my affairs.

Notes respecting the Museum of the Edinburgh College of Surgeons:—

1st. *Department of Healthy Anatomy.*—To be kept distinct from that of comparative anatomy, which, however, is to be arranged parallel to it, on the opposite side of the same apartment.

The arrangement for the present may be that which is adopted, viz. bones, ligaments, muscles, brain and nerves, blood vessels, pulmonary organs, digestive, etc.; but a more correct arrangement would be:—

Brain and Nerves.	Organs of Secretion.
Organs of Sense.	Organs of Locomotion.
Organs of Circulation.	Organs of Generation.
Organs of Nutrition.	Organs of Lactation.

The fact, however, is that one may begin at any point in the animal economy; and whatever method is best calculated for demonstrating the structure of the perfect body is the best for the arrangement of an anatomical collection.

The cases being of two kinds, viz. glazed presses and open shelves, a separation of preparations, according as they are dry or wet, is necessary. This is a

desperate evil in a museum, and is productive of great confusion.

In an anatomical museum the cases ought to be all glazed, 8 feet high, elevated half a foot from the floor, 2 feet deep, and furnished with movable shelving.

Such a museum should be in the form of one or more rooms, in the upper flat of a building, 12 feet high, 20 feet broad, lighted from the roof, with low, flat, glazed tables along the middle of the floor.

Architectural decoration ought not by any means to be admitted. The style should be perfectly simple.

Such a museum might be polygonal.

In our Museum the exposed ticketing should be suspended, the cards smaller than they are at present, the articles numbered, the divisions lettered.

2nd. *Department of Comparative Anatomy.*—As the cases are precisely the same as those for the department of human anatomy, disorder cannot be avoided. The same disposition as to the preparations should be followed; but the articles should be arranged according to the classes to which they belong, the subdivisions being the same as the divisions in human anatomy.

A museum for comparative anatomy ought to be very differently constructed from one for human anatomy, as the case fitted for the skeleton of a man is not adapted for that of an elephant or a mouse.

Such a museum must be of larger dimensions, elevated, and lighted from the roof as well as the sides.

3rd. *Pathology.*—The pathological series answers very well for the galleries of our Museum. It was the opinion of one of the members that it ought to have been placed below; but he has lived long enough to confess his error. There is the same defect, of dissimilar cases, productive of disorder, which cannot be avoided.

Preparations and casts should be equally included in the series; but, as many of the latter are too large for the cases, they may be kept apart in a room devoted for that purpose.

The calculi must be placed in glazed tables, and the floor ought to be considered as general receptacle for exordinals belonging to any of all the three series.

The catalogue must be regularly made out, according to the organs or diseases, and not according to the cases, shelving, or tables, though the latter must always be referred to at every article.

The system of ticketing must be as follows:—

The exposed tickets uniform as to size and writing, numbered to correspond with the numbers of the articles, varnished, of a neat oblong form, suspended over the preparation.

The tickets within the glazed cases to be of the same size, *suspended* if possible; if not, to be supported by a small piece of wood with a groove, painted white.

Every museum ought to have a library containing such books as are necessary for reference or illustration.

It ought to be *well* and *neatly* arranged, kept remarkably *clean*, and free of all *smells*, as of varnish, turpentine, camphor, and especially putrefaction.

It ought to have the proper number of hands, and the keepers and assistants should not be *overpaid*, nor yet too scantily supplied, otherwise they become negligent.

Wednesday, 25th September 1833.

In the morning made inquiries respecting coaches to Edinburgh, and in Gracechurch Street bought four ounces of entomological pins for Mr. Maclagan, price 8s. 9d. Crossed the Thames by London Bridge, and introduced myself at the Museum of St. Thomas's Hospital.

Presently after a gentleman came up to me, and very politely offered to show me anything remarkable. He accompanied me through the whole collection, and afterwards showed me the room containing the library and preparations illustrative of materia medica.

Mr. Edward W. Nordblad, Curator, St. Thomas's Hospital.

. . . . .

The preparations illustrative of comparative anatomy are in general poor; many of them are decayed, and the collection is decidedly contemptible. In the other departments the preparations are in general good, but the objects are ill-arranged, frequently crowded; in other cases the reverse. The casts, bones, etc., are very dirty, and everything bears the appearance of an old institution as much in need of a radical reform as a Scotch burgh. It seems astonishing that the principle of emulation should not operate here, the Museum of

the neighbouring and rival institutions being comparatively so splendid.

The curator informed me that there are too few hands employed—himself, an assistant, and a person for cleaning; whereas in Guy's there are the curator, an assistant, another person for cleaning and drudgery, a man for preparing skeletons, and a modeller who does nothing else. In the Edinburgh Museum there is a conservator, who does all the work, or pays for having it done. This also needs reform, seeing the establishment is more extensive than either St. Thomas's or Guy's.

Some people make a mighty blowing, and look as if they had discovered a mare's nest when they find a preparation from which the spirit has partially evaporated. Let them learn that in the Museum of St. Thomas's Hospital, in the county of Surrey, there lies the half of a human body dissected, together with a brain, enclosed in an air-tight glass case, with about one inch of spirits in the bottom. The vapour is sufficient to keep the articles in perfect preservation. The fact, however, has long been known to me.

. . . . .

As I have already remarked, it is of little importance what arrangement is adopted, provided it be simple, perspicuous, with *few* primary divisions.

. . . . .

Leaving St. Thomas's I recrossed the river by London Bridge, carrying with me specimens of the oolite of which the old London Bridge was built. I then went in search of Mr. Scott, my publisher.

Well, in the first place, as he is newly set up, his name is not in the Directory, so I went to the old establishment of Dove, with whom he was in Piccadilly, No. 178. The shop untenanted. Called at next door. The people there knew nothing of Scott, but directed me for Dove, to Wigmore Street, where again I was directed to Bartlett's Buildings. When I came to the end of Oxford Street, where they were said to be, nobody knew anything of them. One person said he had seen such a place, but could not tell where. Being in the neighbourhood of Soho Square, I entered it, and found in a corner the Linnean Society's Rooms—5 o'clock—shut. However, the servant showed me them. The apartments are not suitable, being those of a common dwelling-house. The collections consist of—the Linnean herbarium, Sir James Smith's herbarium, an East India collection of plants, birds of New Holland, various quadrupeds and birds, and other objects. The plants are fastened upon strong bluish-white paper of large size. There is also a good library. The hall for meetings rather shabby. Entomological collection well. I then returned towards St. Paul's, and went to 31 Poultry, which was tenanted by a book-seller from Banff, a Mr. Cowie, to whom I was introduced by Dr. Barclay eleven years ago. He is dead, his wife married to his successor in trade, who retains the name, in this manner—Cowie and Co. By the by, I saw in Gracechurch Street to-day a curious instance of this kind, viz. *Stone*, late *Flint*. A person in the shop gave me Scott's direction, viz.—Scott and Webster, 36

Charterhouse Square, nr. West Smithfield. By this time, however, it was rather late, and I was rather fatigued, so I thought I should rather return to Aldermansbury.

In a letter from Edinburgh I am directed to get from J. Simpson, stock manufacturer, 166 Strand, South Side, a military stock, purchased by Kenneth MacCaskill, assistant surgeon, 1st Foot, on 10th September. I have reached the Strand; but in 166 is a person named Whitelsock, and in 106 are Widow Dyke and Son, quill manufacturers to His Majesty; and Simpson I find nowhere. However, I have done my duty. There remain for me now—

To see Heaviside's Museum.
To deliver Mr. Coleman's letter.
To see Mr. Scott.
To call on Mr. Linning.
To visit Mr. MacCulloch.
To pack up my movables.
To pay my debts.
To take a seat in or on a coach, and to leave London.

It seems a little strange to a stranger that in London nobody knows anybody, excepting those that it especially concerns him to know. This is true Irish, but at bottom correct. In Edinburgh everybody knows everybody with whom he has nothing to do, and his neighbour's affairs are of much interest to him, especially if he has no business with them. In Scotland a man is nothing unless he has a long string of ancestors, in England nothing unless he has a long purse. A Londoner does not inquire respecting the man who

occupied his shop last year, nor does he care who lives next door to him—and why should he? He cannot direct a stranger beyond the street in which he resides, and confesses that he has not seen the interior of St. Paul's or the Colosseum. He cannot tell whence comes the stone with which the street is paved, or how the bricks are made of which his house is built. He is not aware of the rapid decomposition of the oolite of which the public buildings are formed, nor does he consider that while streets in London are thrown down and rebuilt every fifty years, those of Aberdeen last for centuries. London to him is the world, and all beyond is extramundane. Now all this, and much more, arises simply from circumstances; and Dr. MacCulloch, who accuses the Hebridians of want of skill in agriculture, speaks as foolishly as I should do were I to accuse the Londoners of want of observation.

Thursday.

The principal business transacted to-day was the inspection of the Museum of Mr. Langstaff, surgeon, Basinghall Street. It is contained in a small building at the back of his house, and in two apartments of the latter. He says there are upwards of 7000 articles. The pathological collection is excellent and, according to his account, the case of every preparation is accurately detailed. In comparative anatomy there is a very considerable series. He has also a great number of reptiles and insects in good condition. The morbid structures are excellent. The skeletons

are not numerous, nor are they kept in good condition. Skulls of mammifera rather numerous, but not remarkably fine. There is a good series of national skulls. Mr. Langstaff is disposed to part with his collection. He says he does not exactly know its value, but thinks it may be worth from £6000 to £7000. I imagine, speaking vaguely, that it may be worth £2000. It seems to be more extensive than the Bell collection purchased by the Edinburgh College of Surgeons; but unless the articles were laid out so as to be properly seen, one cannot judge with accuracy.

CARLISLE, *Saturday night.*

On Thursday evening, at a quarter from six, I left London by coach, said to be for Edinburgh, after paying £4:1s. for transportation, and proceeded in the direction of Manchester, where I arrived at four on the afternoon of Friday. The night was exceedingly beautiful, the temperature being moderate, the atmospheric current gentle, the moon bright, and the stars scintillating in their usual manner. I saw three falling stars, one of them nearly as large as Jupiter. From three to six in the morning, however, the cold was so great that I was almost benumbed. A moonlight ride in England is pleasant enough. The numerous pretty towns and villages through which we passed, the gentle character of the scenery, the placidity of the night, the sense of security, and the rapidity of motion, conspired to render the transit

agreeable. The celerity with which the change of horses was effected was admirable, but nothing of any importance occurred on the journey. The country was flat, or very slightly undulated, until we came to Derbyshire, where hills of considerable elevation presented themselves. The white mist that covered the lowest grounds along our course seemed at a little distance like a sheet of water, for which I at first took it. The first light of the morning sun showed the herbage covered with hoar frost. A short delay caused by a refractory horse, which had to be changed, enabled the passengers to get out and walk about a mile, which had a good effect in restoring our limbs to their natural state. At the Royal Hotel in Manchester I had a most refreshing sleep of eight hours' continuance, after which I was awakened by the pain of some bug-bites on the neck and back.

We left Manchester at half-past five, and arrived here at nine. It rained more or less heavily the whole day, but the temperature was mild, and I experienced very little inconvenience. The first part of our journey was not interesting, the country being flat, and disfigured by brick towns and manufactories; but a change soon came over the scene, and from Lancaster to this place the country is hilly and even mountainous. The geological phenomena observed were interesting, although, of course, imperfectly observed. During the night, from London to Derby, I could only see that the country was secondary, consisting

of clays and lias. In Derbyshire I saw amygdaloid, carboniferous limestone, millstone-grit, and other secondary rocks. To-day the rocks seen were carboniferous limestone, sandstones of several formations, a splendid mountain of the first secondary limestone beyond Kendal, mountains of a kind of slate intermediate between clay slate and compact felspar. With respect to botany, I could not mark much of any importance. *Inula dysenterica, Sanguisorba officinalis, Convolvulus sepium*, etc.

Between Kendal and Shap is a track of high ground, covered with peat and heather, as wild as any that I have seen in the Highlands or Hebrides.

EDINBURGH.

At Carlisle I slept nearly four hours. It had rained heavily during the night, and when I arose at four, it still continued. Breakfast was on the table in the coffee-room, and after appropriating to myself a moderate quantity of it, I ascended the Edinburgh mail, to which I had transferred myself by paying 7d. additional. The distance to Edinburgh is 96 miles, and we arrrived there at half-past three. At the head of the Solway Firth the land is alluvial and almost perfectly flat, enclosed by hedges, generally without trees in them, contrary to the English practice. On coming to the Esk we passed for several miles along that river, crossing and recrossing it several times. The scenery was perfectly Scottish—that is to say, the fields large, the trees left to assume

their natural forms, the hedges trim, the houses built of stone, the heights covered with trees, the hills bare and heathy. The river tumbled, and rushed, and shot silently along, or curled into eddies as it proceeded in its winding course between its lofty banks, which were often precipitous, and generally covered with trees and shrubs. Nothing half so beautiful occurred between London and Scotland. At length the road left the river and passed by one of its tributaries, until we ascended far among the high green hills of transition slate, covered here and there with brown fern. After passing through a long, narrow, bare glen, we entered another, the streamlet of which flowed eastwards to join the Tweed. Cultivation increased as we proceeded, the country became more wooded, and as we approached Hawick, the valley opened. From that place to Selkirk the ground is high and bleak, but partially cultivated. The rock was everywhere greywacke and slate. From Selkirk to Galashiels the road passes along the bottom of the valley of the united Yarrow and Ettrick streams—Abbotsford on the south side of the Tweed—Melrose obscurely seen at a distance. The valley of the Gala is not remarkable, excepting towards its lower part, where it is wooded and partially cultivated. The hills are stony and bare, and although in many places cultivation extends far up the secondary valleys, the ground is scarcely anywhere sheltered by hedges or trees, which would certainly be of decided advantage. From this to the neighbourhood of Dalkeith the ground is high,

heathy, destitute of wood, and but slightly cultivated. There is, however, a very extensive tract of good, slightly sloping ground on the edge of the hilly district that is capable of yielding crops or woods. As you come over the ridge, you see in succession the Fifeshire Lomonds, the Pentland Hills, and Arthur's Seat. I observed that beyond Dalkeith the roads are repaired with a blue limestone, seemingly of the carboniferous series, but presenting appearances differing considerably from any variety that I have seen.

The Museums which I have visited are the following :—

Museum of the Glasgow University.
Museum of the Andersonian Institution, Glasgow.
Museum of the Liverpool Institution.
Museum of the Dublin College of Surgeons.
Museum of the Dublin Society.
Museum of the Bristol Institution.
Museum of the London College of Surgeons.
Museum of Guy's Hospital.
Museum of St. Thomas's Hospital.
Museum of Bartholomew's Hospital.
Museum of King's College, London.
Comparative Anatomy and Natural History Museum, London University.
Anatomical and Pathological Museum, London University.
Materia Medica Collection, London University.
Comparative Anatomy and Natural History Museum, Guy's Hospital.
Obstetrical Museum, Guy's Hospital.

British Museum.
Museum of the Zoological Society.
Museum of the Linnean Society.
Museum of the Geological Society.
Mr. Langstaff's (Heaviside's) Museum.
Anatomical and Pathological Museum, Fort Pitt, Chatham.
Natural History Museum, Fort Pitt, Chatham.
Museum of the Chatham Institution.

V

EXTRACTS FROM PROFESSOR MACGILLIVRAY'S WORKS EXPLANATORY OF HIS SYSTEM OF ORNITHOLOGICAL CLASSIFICATION AS DIFFERING FROM THOSE OF OTHER ORNITHOLOGISTS.

1.

THE object which I had in view when, many years ago, I commenced the observations recorded in this work was at some convenient season to lay before the public descriptions of the birds of Great Britain, more extended, and if possible more correct, than any previously offered. To accomplish so ambitious a purpose, I judged it necessary to direct my attention to the living objects themselves, rather than to their skins in collections or their portraits in books; to follow them in their haunts, observe their manners, procure unmutilated specimens, carefully examine all their parts, and thus be enabled to bring forward facts that had been entirely overlooked, and place others in a light in which they had not previously been viewed. Short specific characters, slight descriptions or notices, and measurements of parts, I could easily have obtained by visiting museums and

consulting books; but the elaboration of a detailed account of the species, such as is to be found in the following pages, could obviously be accomplished only by much labour of a different kind.—*British Birds*, vol. i., Preface.

2.

In again presenting to the public some of the results of my long-continued examination of the habits and structure of the birds of Great Britain, I may be permitted to offer a few retrospective remarks. The introduction to the first volume contains, among other matter, a description of the skeleton, the organs of flight, and the digestive apparatus of birds, rendered necessary by the neglect of anatomy evinced by our most esteemed ornithological writers, who in their treatises have either expressly maintained, or practically shown it to be their opinion that the inspection of the external parts is a sufficient guide to zoological knowledge. In avoiding this error, as I cannot but esteem it, I have not fallen into the opposite one of considering an acquaintance with the internal structure of animals alone necessary to their historian, but have entered into details as to external form, and the texture and colours of the cutaneous system, much more extended, and, if my efforts have been successful, not less accurate, than those which I have met with in any of the works alluded to, and have presented numerous facts relative to the habits and economy of the different species.

The varieties exhibited in the mode of flying, the differences of manners, the dispersion and migration of birds, were introduced to notice in chapters intervening between the methodical descriptions of the orders under which I thought it expedient to arrange the species. In recalling these circumstances to mind, my object is simply to connect the past with the present, and direct the attention of the reader to the continuity of plan and similarity of execution exhibited by the two volumes; not certainly to boast of my performances, which I am convinced require not a little of that kind of indulgence which the candid and considerate critic is always ready to apply to the productions of an artist who honestly and earnestly, although not always successfully, strives to represent Nature as she appears to him.

In the present work, as in others, and in all my papers published in various journals, I have endeavoured to adapt the style to the subject, rendering it compact and precise when engaged with technical descriptions, copious and florid when treating of the actions and haunts of birds, abrupt or continuous, direct or discursive, harsh or harmonious, according to the varying circumstances of the case. My aim has been to amuse as well as to instruct, to engage the affections as well as to enlighten the understanding, to induce the traveller on the road to science to make occasional excursions, tending to raise his spirits, and to show to the public that ornithology is not necessarily so repulsive as some of its votaries represent it.—*British Birds*, vol ii., Preface.

3.

Several keen observers of birds have, to my sure knowledge, received from the information conveyed in these volumes an impulse which will effectually prevent them from ever perverting Nature by forcing her into quinary or ternary arrangements, or from dwindling into mere describers of skins, and indiscriminating compilers of correct, doubtful, and erroneous observations. Of such pupils I am proud, and if my exultation should be held as an indication of vanity, I cannot help it, for I am constrained to speak the truth. Should any man conceive himself injured thereby, I hope he may consider that in matters of science there ought to be perfect freedom of thought, and that a very obscure individual like myself may sometimes fall upon truths subversive of theories invented by men of the highest intellect.—*British Birds*, vol. iii., Preface.

4.

It seems difficult to conjecture why the vultures should be, properly speaking, destitute of inferior larynx. What is there in their voice or respiration that renders an inferior laryngeal muscle, or a division of the last tracheal ring, inexpedient? Such questions tend to show that much remains to be studied in the anatomy and physiology of birds.

Observations like these may appear unnecessary to

the persons who view birds merely as composed of skin and feathers; but to them I now cease from addressing myself. They will gradually disappear from the earth, and their place will be occupied by men who will study birds as organic beings. The attempt which I have made to establish a rational method of study in this most interesting department of science, however feeble it may be, will yet form, I am well persuaded, the commencement of a new era among my countrymen, whom I hope yet to see perfecting my favourite study to such a degree as to render these volumes antiquated and effete. For my own part, I am well pleased to think that my labours, however little appreciated by such of my contemporaries as evidently conceive themselves to be the sole depositaries of ornithological knowedge, will be productive of beneficial results, inasmuch as they will stimulate to increased exertion some of those young and ardent naturalists who, to my certain knowledge, have derived pleasure from even the rude attempt at observation of so humble an individual as myself.—*British Birds*, vol. iii. p. 159.

5.

Each of our many ornithologists, real and pretended, has a method of his own: one confining himself to short technical descriptions as most useful to students; another detailing more especially the habits of the birds as more amusing to general readers; a third viewing them in relation to human feelings and passion; a

fourth converting science into romance, and giving no key to the discrimination of the species, bringing his little knowledge of the phenomena under the dominion of imagination, and copiously intermingling his patch-work of truth and error with scraps of poetry. The plan of this work is very different from that of any of these, and is not by any means calculated to amuse the reader who desires nothing more than pleasant anecdotes or fanciful combinations, or him who merely wishes to know a species by name. It contains the only full and detailed technical descriptions hitherto given in this country. The habits of the species are treated of with equal extension in every case where I have been enabled to study them advantageously. The internal structure has been explained in so far as I have thought it expedient to endeavour to bring it into view, and in particular the alimentary organs, as determining and illustrating the habits, have been carefully attended to. If imagination has sometimes been permitted to interfere, it has only been in disposing ascertained facts so as to present an agreeable picture, or to render them easily intelligible by placing them in relation to each other.—*British Birds*, vol. v., Preface.

VI

EXTRACTS FROM PROFESSOR MACGILLIVRAY'S WORKS DESCRIPTIVE OF BIRD LIFE, OF PERSONAL ADVENTURE FOR SCIENTIFIC INVESTIGATION, OR OF PICTURESQUE SCENES, ETC.

1.—A NIGHT EXCURSION TO THE WELLS OF DEE.

IT is pleasant to hear the bold challenge of the gor-cock at early dawn on the wild moor remote from human habitation, where, however, few ornithologists have ever listened to it. I remember with delight the cheering influence of its cry on a cold morning in September, when, wet to the knees, and with a sprained ankle, I had passed the night in a peat bog in the midst of the Grampians, between the sources of the Tummel and the Dee. Many years ago, when I was of opinion, as I still am, that there is little pleasure in passing through life dry-shod and ever comfortable, I was returning to Aberdeen from a botanical excursion through the Hebrides and the south of Scotland. At Blair Atholl I was directed to a road that leads over the hill, and which I was informed

was much shorter than the highway. By it I proceeded until I reached Blair Lodge, where I obtained some refreshment, of which I stood greatly in need. The good woman very benevolently exerted herself to persuade me to remain all night, the hills being, as she said, bleak and dreary, entirely destitute of everything that could afford pleasure to a traveller, and even without human habitation, the nearest house being fifteen miles north. It was now six o'clock, and I was certain of being benighted, but I had promised to be at the source of the Dee by noon of next day, and all the dragons of darkness could not have prevented me from at least striving to fulfil my engagement. They had never heard of the spring in question, nor even of the river; no Cairngorm could be seen, and a woman just arrived from the Spey informed me that I should be under the necessity of going through Badenoch before I could get to it. I placed more confidence in my travelling map. All, however, shook their heads when I disclosed my plan, which was to proceed eastward, cross a stream, get to the summit of a ridge of mountains, and so forth, until I should reach the first burn of the Dee, where I expected to find my friend Craigie. It was sunset when I got to the top of the first hill, whence I struck directly east, judging by the place where the sun disappeared behind the rugged and desolate mountains. After traversing a mile of boggy heath, I found myself put out of my course by a long, deep, rocky valley or ravine which I was obliged to double, and before I

had accomplished this night fell. I travelled on, however, about two miles farther, and coming upon another but smaller valley, in which I was apprehensive of breaking my neck if I should venture through it, I sat down by a rock, weary, and covered with perspiration. Rest is pleasant, even in such a place as this; and when I had experienced a little of its sweets, I resolved to take up my abode there for the night. So, thrusting my stick into the peat between me and the ravine below, I extended myself on the ground and presently fell into a reverie, reviewed my life, gave vent to the sorrow of my soul in a thousand reflections on the folly of my conduct, and ended with resolving to amend! Around me were the black masses of the granite hills rising to heaven like the giant barriers of an enchanted land; above, the cloudless sky, spangled with stars; beneath, a cold bed of wet turf; within, a human spirit tortured with wild imaginings and the pangs of a sprained foot. "In such a place, at such a time," and in such a mood, what are the vanities of the world, the pomp of power, the pride of renown, and even the pleasures of bird-nesting! Having in a short time become keenly sensible that a great portion of vital heat had oozed out of me, I looked out for a warmer situation; but, alas, with little success; for although I pulled some stunted heath and white moss, with which I covered my feet, and laid me down by another crag that afforded more shelter, I could not sleep. After a while, having experienced a fit of shivering, I got up to gather more heath, with

which I formed a sort of bed and lay down again. But even heath was not to be obtained in sufficient quantity, so that for a covering I was obliged to bury myself in moss and turf, with the soil adhering. At long, long length, the sky began to brighten in what I supposed to be the north-east, and I was anxiously looking for the approach of morn, when gradually the pale unwelcome moon rose over a distant hill. It was piercing cold, and I perceived that a strolling naturalist, however fervid his temperament, could hardly, if scantily clad, feel comfortable even among moss, in a bog of the Grampians. What a blessing a jug of hot water would have been to such a stomach as mine, aching with emptiness, and nothing, not even *tripe-de-roche*, to be got to thrust into it. However, morning actually came at last, and I started up to renew my journey. It was now that I got a view of my lodging, which was an amphitheatre formed of bare craggy hills, covered with fragments of stone and white moss and separated by patches of peat bog. Not a house was to be seen, nor a sheep, nor even a tree, nor so much as a blade of green grass. Not a vestige of life can be found here, thought I; but I was reproved by a cry that startled me. The scarlet crest and bright eye of a moor-cock were suddenly protruded from a tuft of heather, and I heard with delight the well-known kok, kok of the "blessed bird," as the Highlanders call him. It was a good omen; the night and dulness had fled, and I limped along as cheerily as I could. My half-frozen blood soon regained its proper tempera-

ture; ere long I reached the base of the rocky ridge, and after passing some hills, traversing a long valley, and ascending a mountain of considerable height, I took out my map, and looking eastward below me, saw, to my great satisfaction, a rivulet running for several miles directly in the course marked. I was assured that this stream, whether the source or not, ran into the Dee, as it proceeded eastward, and therefore I directed my steps toward it. But here, too, a scene occurred which gave me great pleasure. Some low croaking sounds came from among the stones around me, and presently after a splendid flock of grey ptarmigans, about fifty in number, rose into the air and whirred past me on their way to the opposite eminence. On the brow of the hill I found two large fountains, the sources of the stream below, of each of which I drank a mouthful, and proceeded. My friend, however, was not to be seen; but it was too early; and so to pass the time I explored another of the sources of the rivulet that rose farther up in the glen. But at length the scene became too dreary to be endured: desolate mountains, on whose rugged sides lay patches of snow that the summer's suns had failed to melt; wild glens, scantily covered with coarse grass, heath, and lichens; dark brown streams gushing among crags and blocks, unenlivened even by a clump of stunted willows: and I followed the rivulet, judging that it would lead to the river, and the river to the sea. For seven long miles I trudged along, faint enough, as you may suppose, hav-

ing obtained no refreshment for eighteen hours, excepting two mouthfuls of cold water; so that even the multitudes of grouse that sprung up around me ceased to give much pleasure, although I had never before started so many, even with a dog, in a space of equal extent. At one o'clock, however, I came to a hut, tenanted by a person named MacHardy, who, expressing his concern at my having been out all night, treated me to a glass of whisky and some bread and milk. At this place, Dubrach, stood three half-blasted firs, and about a mile and a half farther down I came upon a wood, the first that I had seen since I left Blair. The silver Dee now rolled pleasantly along the wooded valley, and in the evening I reached Castleton of Braemar, where, while seated in the inn, at a little round table, reading *Zimmerman on Solitude*, which, to my great joy, I had found there, and sipping my tea, I heard a rap at the door. "Come in," said I; it was my best friend, with whom I spent a happy evening, in which, I believe, little mention was made of ptarmigans, grey or brown.—*British Birds*, vol. i. pp. 175-179.

2.—Mountain Inspiration.

It is delightful to wander far away from the haunts and even the solitary huts of men, and, ascending the steep mountain, seat one's self on the ruinous cairn that crowns its summit, where, amid the grey stones, the ptarmigan gleans its Alpine food. There, communing

with his own heart, in the wilderness, the lover of Nature cannot fail to look up to Nature's God. I believe it in fact impossible, in such a situation, on the height of Ben-na-muic-dhui or Ben Nevis, for example, not to be sensible, not merely of the existence but also of the presence of a Divinity. In that sacred temple, of which the everlasting hills are the pillars, and the blue vault of heaven the dome, he must be a fiend indeed who could harbour an unholy thought. But, to know himself, one must go there alone. Accompanied by his fellows, he may see all of external Nature that he could see in solitude, but the hidden things of his own heart will not be brought to light. To me the ascent of a lofty mountain has always induced a frame of mind similar to that inspired by entering a temple; and I cannot but look upon it as a gross profanation to enact in the midst of the sublimities of creation a convivial scene, such as is usually got up by parties from our large towns, who seem to have no higher aim in climbing to the top of Ben Lomond or Ben Ledi than to feast there upon cold chicken and "mountain dew," and toss as many stones as they can find over the precipices.—*British Birds*, vol. i. p. 204.

3.—Flight of Birds.

The folly of chasing sparrows depends upon the object you have in view. If the divine wisdom and power have been exercised in creating them, and the good providence of God displayed in caring for them,

it cannot be foolish in us to study their habits, provided we look upon them with relation to the author of their being. However, let us go on: they have flown, and you see that they move about in flocks, that is, are gregarious at this season, as many species of small birds are in winter, the lark, for example, linnets, and buntings. Before us are some birds in the hedge, chaffinches, which, as you observe, fly in a manner somewhat different from that of the sparrows. Then, the rooks, which you see high in the air, moving steadily and sedately along, with regularly-timed beats of their expanded wings, and now, as if seized with some sudden panic, or impelled by some frolicsome propensity, dashing down headlong, crossing each other, whirling and undulating: how different is their flight from that of those wood pigeons, which advance with rapidity, moving their wings with quick strokes, and making the air whistle as they glide along; while the two white gulls, with their outstretched, long, arched wings, float buoyantly in the clear sky, bending gently to either side, as they advance from the sea.—*British Birds*, vol. i. p. 238.

4.—A Lover of Nature—Audubon.

We are all school-boys, or at least scholars, and when we forget that we are so, we become fools. If we go to the school of Nature, and study God's providence, we can be better employed only when in the school of revelation we study God's grace. Let us ever retain

our school-boy feelings, so long as they are innocent. There is a freshness of heart manifest in every real lover of Nature—a delightful feeling, gratifying not to one's self only, but to his companions. When it is gone, and the frost of worldly wisdom has chilled the affections, the naturalist becomes a pompous, pedantic, stiff-necked, cold-blooded thing, from which you shrink back unwittingly. I have the pleasure of being familiar with an ornithologist who has spent thirty years in study, who has ransacked the steaming swamps of Louisiana, traversed the tangled and trackless woods of the Missouri, ascended the flowery heights of the Alleghanies, and clambered among the desolate crags of cold and misty Labrador; who has observed, and shot and drawn, and described the birds of half a continent. Well, what then? Has this man the grave and solemn croak of that carrion-crow, or the pertness and impudence of that pilfering jackdaw. No, I have seen him chasing tom-tits with all the glee of a truant school-boy, and have heard him communicate his knowledge with the fervour and feeling of a warm-hearted soul, as he is.—*British Birds*, vol. i. p. 239.

5.—A Tame Rock Dove.

The boys in the Outer Hebrides often attempt to rear young doves, but their cares are seldom continued long enough. They introduce the food, dry barley grain, by the side of the mouth, which occasions inflammation

and swelling of the basal margins of the mandibles. When a boy, I had a young rock dove, which I fed for some time in this manner, until the bill became tumid and sore, when, in consequence of advice from a friend, I took a mouthful of barley and water, and introduced the pigeon's bill, when the bird soon satisfied itself, flapping its wings gently and uttering a low cry all the while. It grew up vigorously, shed the yellow down-tips of its feathers, and began to fly about. Towards the middle of autumn it renewed its plumage, and assumed the bright and beautiful tints of the adult male. Whenever I escaped from the detested pages of Virgil and Horace, the pigeon was sure to fly to me, and sometimes alighted on my head or shoulder, directing its bill towards my mouth, and flapping its wings. Nor did it ever fly off with the wild pigeons, which almost every day fed near the house, although it had no companions of its own species. At length some fatal whim induced it to make an excursion to a village about a mile distant, when it alighted on the roof of a hut and the boys pelted it dead with stones. Long and true was my sorrow for my lost companion; the remembrance of it will probably continue as long as life. I have since mourned the loss of a far dearer dove. They were gentle and lovely beings; but while the one has been blended with the elements, the other remains "hid with Christ in God," and for it I "mourn not as those who have no hope."—*British Birds*, vol. i. pp. 275, 276.

6.—A Winter Bird Scene at the Mouth of the Almond.

The tide is out, and on the muddy flat at the mouth of the Almond you observe vast collections of rooks and gulls. Small flocks of ducks are swimming about in the stream, and groups of sandpipers are diligently probing the mud along its edges. Far away, at a safe distance, are many curlews and oyster-catchers. But see, scattered all over the sand, running with a half-hopping motion, and as they rise on wing displaying the white of their wings and tail, the beautiful snow buntings. At the edge of the water stand in a fixed and watchful posture a pair of herons; and, out at sea, are seen here and there a few dark-coloured birds, which may be cormorants or ducks. A flight of sandpipers is a beautiful sight; there they wheel around the distant point, and advance over the margin of the water; swiftly and silently they glide along; now, all inclining their bodies to one side, present to view their under surface, glistening in the sunshine; again, bending to the other side, they have changed their colour to dusky grey; a shot is fired, and they plunge with an abrupt turn, curve aside, ascend with a gliding flight, and all, uttering shrill cries, fly over the stream to settle on the shore that stretches out towards Barnbogle ruins. I have seen the sand fords of the Hebrides in autumn, when those birds descend with their broods from the moors, almost completely covered with them and the golden plovers.

What interest one could find in merely describing the skins of these birds in his closet, it is somewhat difficult to imagine; nor is it obvious that the examination of their structure, without any reference to their habits, is a much more rational occupation. The mere closet-naturalist, and the mere anatomist, find little to interest them in such a sight as this; and the mere field-naturalist, however delighted with it, cannot enjoy that true pleasure which results from a knowledge of the adaptation of means to ends, by which all these species have their peculiar spheres of action determined.—*British Birds*, vol. i. pp. 301, 302.

7.—On Clisheim in a Snow-Storm.

Having in October 1817, as I find by one of my note-books, left Borve in Harris, in company with the Reverend Mr. Alexander Macleod, minister of the Forest district, I crossed the sand ford and hills of Luskentir to the little Bay of Kindibig, where we lodged with a farmer, who next day ferried us over Loch Tarbert to a place called Urga. We remained there for a night, and then continued our journey, proceeding up a long, craggy, and bleak valley, in which is a very dark-coloured lake, famous for a goblin-beast which is seen upon it in summer in the form of a black mass having three humps. The wind was exceedingly keen, the hail came in great showers, and the summits of the mountains were covered with snow. I left the parson a little above Marig, a

creek on Loch Seaforth, in which was his dreary-looking habitation, and having resolved to ascend the highest hill, in order to witness a Hebridian snow-storm in all its glory, I proceeded towards Clisheim, the height of which is estimated at somewhat more than three thousand feet. In despite of hail and snow, and the furious whirlwinds or eddying blasts that swept the mountain at intervals, I made my way, though not without labour, to the summit; and well was I recompensed, for there I enjoyed a very sublime spectacle. I was on the highest pinnacle of that range of islands denominated the Outer Hebrides or Long Island, perched, like a ptarmigan, on a craggy and precipitous ridge. The islands of Uist, Harris, and Lewis lay, as it were, at my feet. Toward the east and south, in the extreme distance, appeared the mountains of the counties of Ross and Inverness, with the pointed hills and craggy capes and sloping plains of Skye. Westward, a long series of summits, commencing with that on which I stood, and forming a broad ridge, intercepted transversely by deep valleys, extended for several miles. They appeared to be much lower than the mountain on which I was, and resembled heaps of sand formed by pouring it from a vessel. The snow lay rather deep on them all, and the whirlwinds that swept along their ridges, scattering it in spiral flakes, presented an indescribably beautiful and sublime appearance. I was enveloped in one, but it did not prove very boisterous. The Atlantic was covered with huge clouds, that advanced in disorderly groups, nearly on a level with my position, but the waving streams of snow and

hail that poured from them left no trace on the stormy waters. Toward the north lay the dreary flats of Lewis, covered with lakes and flanked with the Park and Uig mountains. Having gazed upon the splendid scene until nearly frozen, I descended with considerable difficulty into a deep valley, where I encountered a fall of snow so dense as to render me apprehensive of being smothered by it. I felt too, for the first time perhaps, the benumbing effects of cold, my feet and fingers having become almost senseless, and a feeling of faintness having crept over me. However, by walking and running I soon recovered heat enough, and after passing the deep glen of Langadale, ascended an eminence in a kind of pass between two mountains, whence I discovered tokens of cultivation at the distance of three or four miles.—*British Birds*, vol. i. pp. 306, 307.

8.—Crossbills Feeding.

In the autumn of 1821, when walking from Aberdeen to Elgin, by the way of Glenlivet and along the Spey, I had the pleasure of observing, near the influx of a tributary of that river, a flock of several hundreds of crossbills busily engaged in shelling the seeds of the berries which hung in clusters on a clump of rowan trees. So intent were they on satisfying their hunger that they seemed not to take the least heed of me, and as I had not a gun I was content with gazing on them, without offering them any molestation. They clung to the twigs in all sorts of positions, and went through the

operation of feeding in a quiet and business-like manner, each attending to his own affairs without interfering with his neighbours. It was indeed a pleasant sight to see how the little creatures fluttered among the twigs, all in continued action, like so many bees on a cluster of flowers in sunshine after rain. Their brilliant colours, so much more gaudy than those of our common birds, seemed to convert the rude scenery around into that of some far distant land, where the redbird sports among the magnolia flowers.—*British Birds*, vol. i. p. 425.

9.—The Raven in the Hebrides.

The character of the raven accords well with the desolate aspect of the rugged glens of the Hebridian moors. He and the eagle are the fit inhabitants of those grim rocks; the red grouse, the plover, and its page, of those brown and scarred heaths; the ptarmigan of those craggy and tempest-beaten summits. The red-throated diver and the merganser, beautiful as they are, fail to give beauty to those pools of dark-brown water, edged with peat banks, and unadorned with sylvan verdure. Even the water-lily, with its splendid white flowers, floating on the deep bog, reflects no glory on the surrounding scenery, but selfishly draws all your regards to itself. There, on the rifted crag, let the dark raven croak to his mate, while we search for the species in distant parts of the land.—*British Birds*, vol. i. p. 509.

10.—Scene on an April Day.

It is a lovely April day. All over the pale blue sky are scattered fleecy tufts of white vapour, buds of beauty are bursting from the earth, and the distant waterfall fills the valley with its soothing murmur. How delightful the scenery of these wild hills, where from the rift of the lichen-crusted crag juts out the rowan, whose elegantly pinnated foliage is fast unfolding; where, scattered along the broken steep, are seen the white-stemmed birches, with their drooping twigs and glistening leaflets; while the hillocks are crowned with blossomed furze; and the smooth waters of the deep lake send back the wooded banks and the heath-clad heights!

High overhead wheels in wanton mazes the joyous snipe, piping its singular song, and anon drumming on tremulous wing, as it shoots aslant. The shrill scream of the curlew is responded to by the wail of the lapwing and the melancholy whistle of the golden plover. Already have these birds desposited their eggs on the moor, in which they have scraped a slight hollow for the purpose of receiving them. Should you come upon one of their nests, you will admire the arrangement of its four pear-shaped and spotted eggs, the narrow ends of which meet in the centre. Among the tufts of furze and sloe hops the lively ring ouzel, newly arrived from the warmer region in which it has passed the winter; and by the pebbly margin of the pool flits the delicate

sandpiper, whose body is continually vibrating as if on a pivot.

It is the busy season of Nature. What myriads of flowers are silently expanding, what rills of vegetable juices are ascending the stems of the topmost twigs, what mighty preparations, without confusion or bustle, are making to secure an abundant produce of fruit and seed for the support of animal life! How beautiful the brooding mystery of that happy raven, seated on her nest to impart vital warmth to her newly-fledged young, while her mate croaks in joy on the projecting crag, ready to sally forth and drive away the prowling hawk that may chance to come near his ancient seat, the castle of his sires! For weeks might one wander among those wooded glens, finding each hour some fresh object to excite admiration, and warm his bosom with the glow of gratitude toward the Supreme Power which out of nothing has called all these wonders into being. But at present we are mere strolling naturalists, bent on collecting nests and eggs. — *British Birds*, vol. i. pp. 616, 617.

11.—Some of Professor MacGillivray's Friends.

I remember. Mr. Weir is an enthusiast, a lover of Nature, and, although a Conservative and a trapper of birds, a Christian and a scholar. I forgot him when I boasted of having fought my way with my own claymore. You shall see presently how efficient his aid has been.

Other friends too, still dearer, I overlooked, especially him who now, in some Canadian wilderness, is making room for himself and his family, beset perhaps with murderous rebels and renegades, my best and most beloved friend, William Craigie; and him too, of sultry Louisiana, the wanderer of the wild woods, the warm-hearted and generous Audubon; and many more, some of whom I shall have occasion to mention, but above all, one who will presently welcome us, for here, No. 1 Wharton Place, we end our digression for the present. —*British Birds*, vol. ii. p. 13.

12.—The Song of the Blackbird.

Although the blackbird sings at all times of the day, it is more especially in the mornings and evenings that it pours forth its delightful melodies, which, simple as they are, I am unable to describe in a more effective manner than by characterising them as loud, rich, mellow, and much surpassing in effect those of any other native bird, excepting the nightingale, song thrush, black-cap, and garden warbler. I have heard individuals singing most fervently in the midst of a heavy thunder storm, when the rain was falling thickly, and the lightning flashing at an alarming rate; and both this species and the song thrush seem to regard the summer rains with pleasure.

The sweet strain, loud, but mellowed by distance, comes upon the ear, inspiring pleasant thoughts, and

banishing care and sorrow. The bird has evidently learned his part by long practice, for he sings sedately and in the full consciousness of superiority. Ceasing at intervals, he renews the strain, varying it so that although you can trace an occasional repetition of notes, the staves are precisely the same. You may sit an hour or longer, and yet the song will be continued; and in the neighbouring gardens many rival songsters will sometimes raise their voices at once, or delight you with alternate strains. And now, what is the purpose of all this melody? We can only conjecture that it is the expression of the perfect happiness which the creature is enjoying, when, uncarked by care, conscious of security, and aware of the presence of his mate, he instinctively pours forth his soul in joy and gratitude and love. He does not sing to amuse his mate, as many have supposed, for he often sings in winter, when he is not yet mated; nor does he sing to beguile his solitude, for now he is not solitary; but he sings because all his wants are satisfied, his whole frame glowing with health, and because his Maker has gifted him with the power of uttering sweet sounds.—*British Birds*, vol. ii. pp. 89, 90.

13.—The Song of the Thrush.

The song thrush is associated in my memory with the Hebrides, where it is perhaps more abundant than in most parts of Britain. There, in the calm summer evening, such as for placid beauty far exceeds any that

I have elsewhere seen, when the glorious sun is drawing towards the horizon, and shedding a broad glare of ruddy light over the smooth surface of the ocean; when the scattered sheep, accompanied by their frolicsome lambkins, are quietly browsing on the hills; when the broad-winged eagle is seen skimming along the mountain ridge, as he wends his way toward his eyry on the far promontory; when no sound comes on the ear save at intervals the faint murmur of the waves rushing into the caverns and rising against the faces of the cliffs; when the western breeze, stealing over the flowery pastures, carries with it the perfume of the wild thyme and white clover; the song of the thrush is poured forth from the summit of some granite block, shaggy with grey lichens, and returns in softer and sweeter modulations from the sides of the heathy mountains. There may be wilder, louder, and more marvellous songs, and the mocking bird may be singing the requiem of the Red Indian of the Ohio, or cheering the heart of his ruthless oppressor, the white man of many inventions; but to me it is all-sufficient, for it enters into the soul, melts the heart into tenderness, diffuses a holy calm, and connects the peace of earth with the transcendent happiness of heaven. In other places the song of the thrush may be lively and cheery; here, in the ocean-girt solitude, it is gentle and soothing; by its magic influence it smoothes the ruffled surface of the sea of human feelings, as it floats over it at intervals with its varied swells and cadences, like the perfumed wavelets of the summer wind.—*British Birds*, vol. ii. pp. 130, 131.

14.—The Carol of the Lark.

The mellow song of the merle or mavis is apt to inspire melancholy, especially if heard in a sequestered valley toward the close of day, and the feelings which it excites have perhaps as much of a depressing as of a soothing tendency; but the carol of the lark, like the lively fife, excites pure cheerfulness, and might with propriety be prescribed as an antidote of dulness. It is not merely music that we look for in the song of birds, but variety, and the expression of passions, feelings, and wants. Were all our warblers to tune their throats according to rule, we should become sickly and sentimental, fill the valleys with sighs, and groan from the mountain tops; but the loud war-whoop of the eagle, the harsh scream of the heron, and the croak of the raven, are antidotes to the bewitching melody of the black-cap and nightingale. I have endeavoured to trace a repetition at regular intervals in the strains of the lark; but its modulations seem to have no rule. In confinement this bird sings every whit as well as when at large; and when rapidly perambulating the square bit of faded turf in its cage, it enacts its part with apparently as much delight as when mounting "towards heaven's gate."—*British Birds*, vol. ii. p. 170.

15.—The Hen-Harrier.

Having examined the form, and somewhat of the structure of the hen-harrier, we are prepared for the

exhibition of its faculties. Kneel down here, then, among the long broom, and let us watch the pair that have just made their appearance on the shoulder of the hill. Leave these beautiful flowerets to the inspection of that lank-sided botanist, who drags himself slowly along, with a huge tin cannister on his back, and eyes ever bent on the ground. Should he wander hitherward, he will be delighted to cull the lovely tufts of maiden-pinks that surround us; but *we* look heavenward, like the astronomers.

How beautifully they glide along, in their circling flight, with gentle flaps of their expanded wings, floating, as it were, in the air, their half-spread tails inclined from side to side, as they balance themselves, or alter their course! Now they are near enough to enable us to distinguish the male from the female. They seem to be hunting in concert, and their search is keen, for they fly at times so low as almost to touch the bushes, and never rise higher than thirty feet. The grey bird hovers, fixing himself in air like the kestrel; now he stoops, but recovers himself. A hare breaks from the cover, but they follow her not, though, doubtless, were they to spy her young one, it would not escape so well. The female now hovers for a few seconds, gradually sinks for a short space, ascends, turns a little to one side, closes her wings, and comes to the ground. She has secured her prey, for she remains concealed among the furze, while the male shoots away, flying at the height of three or four yards, sweeps along the hawthorn hedge, bounds over it to the other side, turns

away to skim over the sedgy pool, where he hovers a short while. He now enters upon the grass field, when a partridge springs off, and he pursues it with a rapid, gliding flight like that of the sparrow-hawk; but they have turned to the right, and the wood conceals them from our view. In the meantime the female has sprung up, and advances, keenly inspecting the ground, and so heedless of our presence that she passes within twenty yards of us. Away she speeds, and in passing the pool again stoops, but recovers herself, and, rising in a beautiful curve, bounds over the plantation, and is out of sight.—*British Birds*, vol. iii. pp. 371, 372.

16.—The Golden Plover.

Many a time and oft, in the days of my youth, when the cares of life were few and the spirits expansile, and often, too, in later years, when I had made a temporary escape to the wilderness to breathe an atmosphere untainted by the effluvia of cities, and ponder in silence on the wonders of creative power, have I stood on the high moor and listened to the mellow notes of the plover, that seemed to come from the grey slopes of the neighbouring hills. Except the soft note of the ring-plover, I know none so pleasing from the grallatorial tribes. Amid the wild scenery of the rugged hills and sedgy valleys, it comes gently and soothingly on the ear, and you feel, without being altogether conscious of its power, that it soothes the troubled mind, as water

cools the burning brow. How unlike the shriek of the heron—but why should we think of it, for it reminds us of the cracked and creaking voice of some village beldame of the Saxon race. The clear, gentle tones of the Celtic maiden could not be more pleasant to any one, or perhaps much more welcome to her lover, than the summer note of the golden plover to the lover of birds and of Nature. As you listen to it, now distant, now nearer and near, and see the birds with short flights approaching as if to greet you, though in reality with more fear than confidence, with anxiety and apprehension, the bright sunshine that glances on their jetty breasts is faintly obscured by the white vapours that have crept up from the western valley, and presently all around us is suffused with an opaline light, into the confines of which a bird is dimly seen to advance, then another. and a third. Who could represent the scene on canvas or card?—a hollow hemisphere of white shining mist, on which are depicted two dark human figures, their heads surrounded with a radiant halo, and these black-breasted golden plovers, magnified to twice their natural size, and gazing upon us, each from its mossy tuft. It is as if two mortals had a conference on the heath with three celestial messengers — and so they have. Presently a breeze rolls away the mist, and discloses a number of those watchful sentinels, each on his mound of faded moss, and all emitting their mellow cries the moment we offer to advance. They are males, whose mates are brooding over their eggs, or leading their down-clad and toddling chicks among the, to them,

pleasant peat-bogs that intervene between the high banks, clad with luxuriant heath, not yet recovered from the effects of the winter frosts, and little meadows of cotton-grass, white as the snow-wreaths that lie on the distant hill. How prettily they run over the grey moss and lichens, their little feet twinkling and their full, bright, and soft eyes gleaming, as they commence their attempts to entice us away from their chosen retreats. In the midst of them alight some tiny things, black-breasted too, with reddish backs and black nebs and neat pointed wings, which they stretch right up, and then fold by their sides. These are plovers' pages, which also have their nests on the moor. The mist rolls slowly away, and is ascending in downy flakes the steep side of the corrie, whence comes suddenly on the ear the loud scream of the curlew—pleasing too, but to the deer startling. The fewer of these birds on the moors after the 12th of August, the better for the deer-stalker; but that day is far distant.—*British Birds* vol. iv. p. 97.

17.—Common Ring-Plover.

Were I to describe the manners of this gentle creature under the influence of the delightful emotions which the view of it has often excited in me, I should probably appear to the grave admirer of Nature an enthusiast, or an imitator of other men's musings. Well, let him think as he lists; but yet lives there

the man, calling himself an ornithologist, who, quietly strolling along the bright sandy beach just left bare by the retiring tide, and aroused from his pleasing reveries by the mellow whistle of the ring-plover, would not gaze with delight on the pleasant little thing that speeds away before him with twinkling feet, now stops, pipes its clear cry, runs, spreads its beautiful wings, glides close over the sand, and alights on some not distant tuft. What are primaries and secondaries, cœcums and duodenums, types and analogies, squares or circles, to him who thus watches the living bird? There is the broad blue sea, on that hand the green pasture, under foot and around the pure sand, above the sunny sky. Frown not upon the cheerfulness of Nature; shout aloud, run, leap, make the sand lark thy playmate. Why mayest thou not be drunk with draughts of pure ether? Are the gambols of a merry naturalist less innocent than the mad freaks, the howlings, the ravings of sapient men assembled to deliberate about corn-laws, or party zealots upholding their creed by palpably demonstrating their total want of charity?—*British Birds*, vol. iv. p. 119.

18.—The Sea-Pie.

Should one consider the sea-pie the most beautiful of our native birds, I should not much censure his taste. When by the silver Dee, gliding rapidly along, amidst corn-fields, pastures, and fragrant birch-woods,

you hear a loud and shrill cry, and, turning about, see a pair winging their flight up the country, their glossy black and pure white plumage contrasting strongly with everything around, and their long vermilion beaks giving them a strange and foreign aspect, they never fail to rivet your gaze. Equally attractive are they when running about on some grassy meadow, picking up an insect or a slug, then standing, and again advancing with quick, short steps, prettily tripping it among the gowans; then emitting their loud alarm-cries, and flying off to a more distant place, or alighting on a pebbly beach. No creature but man seems to molest them; but of his advances they are always suspicious, as good need they have to be.—*British Birds*, vol. iv. p. 158.

19.—Dunlins Feeding.

I, on the 9th of September 1840, walked to Musselburgh, where I was informed that the sandpipers were very abundant; and, having betaken myself to the mouth of the Esk soon after the tide had turned, was gratified by the sight of a great number of dunlins and ring-plovers. In the first place I met with two flocks reposing, the one among some thin herbage, composed chiefly of *Glaux maritima;* the other on a slightly elevated part of the sand, just above water-mark. Individuals of both species were intermingled, all lying flat on the ground, and in a crouch-

ing attitude, with the neck drawn in. Thus, as I have elsewhere observed, these birds repose during the period of high water in unfrequented places along the shore, and generally, especially if there be a strong wind, in a decumbent posture. On my approaching them, they dispersed, and began to search for food. Presently straggling bands flew in from a distance and alighted on the shore. The dunlins on such occasions come gliding on outspread wings, which in alighting they extend and elevate a little. They then run a few steps, and stand a short time, or at once commence their search. These bands were remarkably intent on seeking for food, so that I was allowed to walk up to about fifteen paces from one of them. In this flock of about fifteen, two limped, apparently having had one of their legs damaged by shot, yet they seemed scarcely less active than the rest. Being in a muddy place, which probably afforded a good supply of food, they did not run much, but yet moved quickly about, with their legs a little bent, the body horizontal, the head a little declined, and the bill directed forwards toward the ground at an angle of about forty-five degrees. I observed that they seemed in general merely to touch the surface, but also sometimes to introduce their bill into the mud for about a fourth of its length; but this always with a rapid tapping and somewhat wriggling movement, and not by thrusting it in sedately. This flock having flown away, I observed another of about twelve individuals alight at a little distance on the other side of the mill-stream.

Being very intent on tapping the mud, they allowed me to approach within ten paces, so that I could see them very distinctly. I was surprised to hear from them a very gentle warble, which was composed of feeble notes somewhat resembling the syllables pee-pee-pee, continually repeated, and with more frequency when the individuals came very near each other. These notes could not be heard at a greater distance than twenty yards, and would thus be entirely lost to the casual observer. All at once I heard a singular noise, which might be likened to a cough, shrill and feeble as it was, and presently found that it came from one which, having picked up something too large for its gullet, stood endeavouring to swallow it by repeated jerks, at each of which it emitted a sharp wheezing or hissing sound. The rest paid no attention to the distressed bird, which in about three minutes got the morsel down, and resumed its search. While thus busily employed, and quite regardless of me, although so near that I could see their little dusky eyes, and distinguish by its tints one individual from another, a sandpiper, *Totanus hypoleucos*, came silently gliding over them at the height of not more than three feet. It was beautiful to see how they all rose simultaneously on wing to the height of from two to four feet, and, finding that they had no cause of alarm, immediately re-alight. I now struck my note-book against my hand, when they all rose, but alighted about five yards off, and three of them came within ten paces of me. As nothing more was to be seen, I examined the marks made by them in

the mud. Although it was soft, very few footmarks were left; but the place was covered with numberless small holes made by their bills, and forming little groups, as if made by the individual birds separately. Of these impressions very many were mere hollows not larger than those on a thimble, and not half a twelfth of an inch deep; others scarcely perceptible, while a few were larger, extended to a depth of two-twelfths; and here and there one or two to the depth of nearly half an inch. On scraping the mud I could perceive no worms or shells. It is thus clear that they search by gently tapping, and it appears that they discover the object of their search rather by the kind of resistance which it yields than by touch like that of the human skin.—*British Birds*, vol. iv. p. 210.

20.—The Common Snipe.

Beautiful are those green woods that hang upon the craggy sides of the fern-clad hills, where the heath-fowl threads its way among the tufts of brown heath, and the cuckoo sings his ever-pleasing notes as he balances himself on the grey stone, vibrating his fan-like tail. Now I listen to the simple song of the mountain blackbird, warbled by the quiet lake that spreads its glittering bosom to the sun, winding far away among the mountains, amid whose rocky glens wander the wild deer, tossing their antlered heads on high as they snuff the breeze tainted with the odour of the slow-paced

shepherd and his faithful dog. In that recess formed by two moss-clad slabs of mica-slate, the lively wren jerks up its little tail, and chits its merry note, as it recalls its straggling young ones that have wandered among the bushes. From the sedgy slope, sprinkled with white cotton-grass, comes the shrill cry of the solitary curlew; and there, high over the heath, wings his meandering way the joyous snipe, giddy with excess of unalloyed happiness.

There another has sprung from among the yellow flowered marigolds that profusely cover the marsh. Upwards slantingly, on rapidly vibrating wings, he shoots, uttering the while his shrill two-noted cry. Tissick, tissick, quoth the snipe, as he leaves the bog. Now in silence he wends his way, until at length, having reached the height of perhaps a thousand feet, he zigzags along, emitting a louder and shriller cry of zoo-zee, zoo-zee, zoo-zee, which over, varying his action, he descends on quivering pinions, curving toward the earth with surprising speed, while from the rapid beats of his wing the tremulous air gives to the ear what at first seems the voice of distant thunder. This noise some have likened to the bleating of a goat at a distance on the hillside, and thus have named our bird the air-goat and air-bleater. The sound, I think, is evidently produced by the rapid action of the wings, which, during its continuance, are seen to be in tremulous motion. It comes on the ear soon after the bird commences its descent, and ceases when, having gained the lowest part of the curve, it recovers itself, and ascends with a

different and ordinary motion of its wings. I have never heard it under any other circumstances. Were it produced by the voice, it might be emitted when the bird is on the ground, or during its ordinary flight; but should one hear it on the moor, he will invariably find that it proceeds from on high. In this manner the snipe may continue to amuse itself for, perhaps, an hour or more; and sometimes, in the clear sky, one may trace it until at length it mounts so high as to be no longer perceptible.

This drumming noise of the snipe commences in April and is continued through the summer. It is altogether a solitary act, although several individuals may often be heard at the same time, and may be an expression of the happiness of the bird, or an intimation of its presence to its mate while sitting upon her eggs. We have no means of ascertaining its object, nor has it been determined whether it be performed by the male only, or by the female also. When the bird has gone through his evolutions, he descends, often with astonishing velocity, on partially extended and apparently motionless wings, diminishes his speed a little as he approaches the ground obliquely, and alights abruptly. —*British Birds*, vol. iv. p. 371.

21.—The Grey Heron.

Far away through the green valley winds the silver Tweed, now rolling its waters over the white pebbles,

then gliding placidly between banks covered with fresh herbage and gaudy florets of many hues. The hum of the wild bee draws your eye toward those beautiful tufts of purple trefoil; the weet-weet, ever vibrating its body as if delicately balanced on its slim legs, runs along the sunny beach, spreads out its pointed wings, and skims over the pool. There, in the water, nearly up to the knees, is the heron, patiently waiting an opportunity of seizing some giddy trout. Those ducklings that swim so beautifully, and dive with such marvellous quickness, he seems to eye with hungry glance; but their watchful protectress is in the midst of them. That wary old water-rat is equally safe, as he nibbles the grass at the mouth of his hole, and at intervals trims his whiskers with his little paws. In short, go where you will, in summer or in winter, to the shores of the sea or the far inland lake, the source of the estuary of the hill-born streams, you may here and there find a solitary heron. —*British Birds*, vol. iv. p. 445.

22.—The Great Black-Backed Gull.

It is a lovely night in June; the moon slowly emerges from behind the distant mountains, the northern horizon is still red with the glare of the departed sun, the winds have sunk to rest, and no sound is heard save the faint murmur of the waves that clash over the distant reefs. Yet, hark! the terns are abroad, and their shrill cries come faintly on the ear, from the far-off sand-point,

where, no doubt, they are engaged with a shoal of launces. Listen again! The oyster-catchers intermingle their clamorous and curiously modulated cries; and now, louder than all, is clearly heard the call of the black-backed gull, faintly seen in the dim light. Here is one of his breeding-places, a turf-crowned crag, torn, as it were, from the rocks, and forming an inlet inaccessible to human feet. Creeping stealthily among the crags, we faintly perceive the birds as they sit on their nests; but some of them have observed us. All spring on their feet, and a few launch into the air, uttering loud cries, which alarm the birds around. It is vain, you perceive, to try to surprise them by night or by day. Wander as long as you will in these places, what more can you see? Perhaps a more acute observer may.—*British Birds*, vol. v. p. 534.

23.—God's Works.

Let us then humble ourselves, that in contemplating God's works, we may ever see Him in the midst of them. If, in this temper, we traverse the valley of the Dee, and ascend the mountains from which the sources of that beautiful river gush forth, even if we discover little that may be of interest to science, we shall find much that may benefit our spiritual nature. And what would it profit a man were he to solve half the mysteries of external Nature, and yet be ignorant of the higher relations of his own being? Strange adventures, perils

among rocks and floods, wonderful discoveries, or magnificent theories, cannot be expected from a quiet journey to be made in one pair of shoes, with no other weapon than a hammer.—*Natural History of Deeside*, p. 23.

24.—Promise of a Bright Day.

The dawn of this 7th of August gave promise of a bright day. How beautiful is the quiet valley as it basks in the sunshine. The corn-fields, some nearly ready for the sickle, others yet green, are spread out by the margin of the river, which glides along in its winding course, emitting a pleasing murmur, excepting which the ear catches no sound; for the air is still, and even the hair-grass waves not its slender panicle. The cattle are feeding on the after-grass; here and there a peasant is seen in the fields, or near the few cottages scattered over the valley; but otherwise all is very still, and in the gentle beauty of the scene one hardly sees a place for human wickedness. If it is not a paradise we gaze upon, it is a scene well fitted to remind us of how much happiness our earthly habitation might yield were it always illuminated by a sense of the Divine presence.—*Natural History of Deeside*, p. 49.

25.—Lochnagar.

Still onward, amidst woods and mountains, and here and there fields, yielding the staple food of the

Scot. Let us again look southward, "o'er moors and mosses mony," to the never-tiring glories of Lochnagar, which is now much nearer to us than when we first saw it. Like Edinburgh, it may be viewed with interest from any station. For my part, I could gaze a quarter of an hour on either every day of the year without getting tired. There, proudly pre-eminent over all around, just as it settled when it was heaved up from the abyss, it stands in solemn grandeur, its ridges wreathed in white vapour. Lochnagar has more dignity than any of our hills, except Ben Nevis.—*Natural History of Deeside*, p. 55.

26.—View from Invercauld Bridge.

At length we stand on the lofty mid-arch of Invercauld Bridge. Before we pass on, let us pause once more—not because we are weary of travel or of the world. Here the bed of the Dee is obliquely intercepted by a broken ridge of slaty rock, passing from south-west to north-east. The stream is broken by it into a succession of little falls and rapids, and then glides away over its stony bed to wind afar amidst pine-clad hills. Beautiful scene! I almost weep when I look upon thee; for tears flow from the pure fountain of happiness as well as from the troubled springs of sorrow. How unlike, in thy quiet loveliness, to the fierce rudeness of human nature! Not a living creature is to be seen but a lad whipping the

water. The western sun shines in full splendour in a sky unobscured, although scattered flakes of white vapour glide slowly eastward in its upper region. Long shadows are projected from the tall pines, while the hill-tops, purpled with flowering heath, or grey with lichen-crusted stones, are lighted with the blaze. Far away up the wooded glens is still seen the scarred ridge of Lochnagar. Not a breath stirs the tiny leaf of the birch, nor a sound is heard but from the waters. Ought not he to whom Providence has allotted all this to be happy? The scene is mine and thine; but happiness comes not from without. Yet, O Invercauld! thou hast a patrimony of beauty. May it long be enjoyed by thee and thine. I see nothing wanting but scattered homes of happy tenants, and little patches of yellow corn, and cows feeding by the river, and sheep on the hills.—*Natural History of Deeside*, p. 56.

27.—The Raven—Poor Bird!

It is now beginning to get dusky. The croak of the raven seems to warn us of the approach of night. Poor bird! he has little cause to harbour friendly feelings towards us; for fearful has been the persecution which he and his race have suffered, if not at our hands, yet at those of our kindred. Very seldom now is a raven to be met with, even in this wild tract of mountain and glen: gamekeepers

and sheep-farmers, with guns and traps, have left but a very scanty residue of a once prosperous and respectable race. The same inconsiderate selfishness which has cleared Van Dieman's Land of its aboriginal population has destroyed our magnificent eagles and sagacious ravens. It is indeed a rare pleasure to hear the barking and yelping of that distant bird which from the red crags to the right calls aloud to his mate, perched behind us on that rugged ridge.—*Natural History of Deeside*, p. 83.

28.—Another Night Visit to the Sources of the Dee.

In September 1819 a poor student of King's College, Aberdeen, ascended to the sources of the Dee on his way to Kingussie and Fort William. From his journal I make the following extract:—"About three or four miles above the Linn, the Dee is joined by a river equal in size, namely the Geaully, the source of which I had explored in 1816, when I came across the mountains from Blair Atholl. Hitherto I had travelled in a westerly direction, but now proceeded northward, following the river. There are no houses beyond the junction mentioned. About a mile above it, I came in sight of a most magnificent rock, with a mountain peak behind it of greater elevation. When I reached this rock, I learned by the light scarlet colour of the clouds on the ridges that the sun was

setting. Passing the rock, I entered a valley bounded on both sides by very lofty and rugged mountains, and terminating in a vast mass, towering above the whole. Before I reached the upper end of this magnificent, though wild and desolate valley, night fell. About this time I saw a deer not far from me. Near the upper end of the valley the stream which I had followed separated into two. It was with great difficulty that I clambered to this part to see which was the largest, that I might follow it. Having ascertained that the largest stream came from a valley which branched off at a right angle from the extremity of the main one, I entered this valley and proceeded about three-quarters of a mile. It was by this time completely dark, and I determined to rest myself."

The narrative goes on to state that the night was passed here, in a sheltered place, but with little sleep, some shivering, and many melancholy thoughts:—

"About midnight I looked up and saw the moon and some stars. They were at times obscured by masses of vapour, which rolled along the summits of the mountains. I had now a better view of my situation. I was near the upper end of a high valley, completely surrounded by enormous masses of rock. Behind me, my face being towards the mouth of the valley, there rose at its upper end a high mountain involved in clouds; on the right hand was another, in the form of a pyramidal rock, and, contiguous with it, a peak of less elevation; on the left hand, a high ridge running from the mountain in the north-west, and

terminating at the mouth of the valley in a dark conical mass; and, straight before me, in the south-east, at the distance of nearly a mile, another vast mountain. The summits of all were at times enveloped in clouds. The wind, which blew from the west, was not keen, and the night was such as, in comfortable circumstances, might be called warm. Yet on awakening from my slumber I felt chilly, and soon after began to shiver. I then rose, and gathered a few large stones and a good deal of grass and short heath, with which I formed a somewhat snug sort of couch. Unloosing my pack, I took a night-cap and a pair of stockings from it, which I applied to their proper use, for my feet had been wetted in crossing a brook, and my hat alone did not keep my head warm after the perspiration it had undergone. Then, eating a little of my scanty store of barley bread, and drinking two or three cupfuls of water from a neighbouring rill, I lay down, put heather and my knapsack over my feet, placed myself in an easy posture, and fell asleep.

"I awoke fresh, but weak, about sunrise. The stream which I had followed here divided into two, and I chose the largest. It led me to a magnificent corrie, in the form of a deep hollow scooped out of the great ridge, on the left of the glen, as described, but now on my right hand in ascending it. The sides of this corrie were formed of sloping rocks of vast height. The rivulet came tumbling down the centre in the form of a cataract. Here the rocks were most abrupt; but I had determined to proceed, at least to

attempt the ascent. Before I reached the base of the rocks, I felt very weak, and was obliged to halt every now and then. However, I proceeded, and at length, being well accustomed to rock-climbing, found myself on the very summit of this vast mass of rock. It was covered with mist, which rolled rapidly along the ridges. The sun now and then appeared through it. The view through the corrie, which I had just ascended, was delightful—dreadful it might have been to some—the whole glen, the deep corrie just beneath, with its fearful rocks, the opposite mountains with an Alpine lake before me. The scene was truly sublime, and I contemplated it with great delight.

"I had now reached the rounded summit of the ridge, and proceeding along the streamlet, which was the principal object of my research, I traced it to two fountains and several smaller springs. I took a glassful from each of the larger, and drank it to the health of my friends. Near these fountains, which were among coarse granite sand, I saw a covey of ptarmigans, and a small bird, which I took for *Alauda pratensis*. The only phænogamous plants which grew on the summit of the mountain were *Silene acaulis* and *Salix herbacea*, both in abundance, the former still in flower.

"Descending on the northern side of the mountain, I came upon a precipitous corrie, down which I did not venture, and farther on found myself on a precipice, from which I had a view of a deep valley, with a lake and a stream, ending in a plain partially covered with

fir. The view from this place was vast, and I thought I distinguished the sea; but of this I was not certain, as the mist obscured the view at times. In my descent I saw a considerable number of ptarmigans, and some specimens of crystallised quartz, though not very fine. On the northern side of the mountain some Alpine lakes occurred, in which I could not find anything but *Sparganium natans*, and a few poor specimens of *Caltha palustris*, which plant I also saw in the rivulets. Holding still a northerly direction, I crossed a broken plain, and ascended a gentle acclivity, at the end of which I found a larger plain, which I also crossed. At the end of this plain I came to an opening which led into a deep valley, bounded by rocks and rapid gravelly slopes. Descending by this valley, which I found very long and very rugged, into a plain which led to a stream of considerable size, and evidently a tributary of the Spey, I at length reached the low ground, and directed myself westward."

Not knowing by name a single one of the localities mentioned in the above narrative, I had not been aware of my having passed up Glen Dee to the base of Benna-muic-dhui, and slept in the Glen of the Garrachory. But the journey of 1850, performed under circumstances in some respects more favourable, has shown me that I had in 1819 visited the so-called sources of the Dee on the ridge of Braeriach, and crossed the range to the valley of the Spey. The description above given, brief and without ornament, is perfectly correct and quite intelligible. My condition at that time was very

different from my present state; but the lapse of thirty years has not diminished my enthusiasm, nor in the least impaired my faculties, physical or mental.—*Natural History of Deeside*, p. 99.

29.—Object of the Study of Nature.

Our objects in examining the stone, the rock, the lichen, the moss, the flower, the fruit, the insect, the bird, or the quadruped, is to exercise our faculties by learning how beautifully, and with what wisdom all things have been constructed, how wonderfully they are formed with relation to each other, and how manifestly they display a power of which we could form no conception were we not to attend to its working as exhibited by them. It is true, we cannot fully comprehend the complicated relations of the most common objects, much less understand the ordination of the universe, or even of our own world; but we labour in hope; we are studying—some of us, no doubt, very superficially, others more profoundly—the works of the Deity; and the more progress we make, the more we glorify Him by an intelligent, not a vague, admiration. There are some who aim at the knowledge of general laws, some who seek simple facts. Both parties will find enough to engage their faculties, and neither will do the work of the other efficiently. There is no reason why one should despise the other. Contempt of anything but vice indicates an unsound mind, a defective

judgment, an ignorance of the relations which men have to each other and to their Creator, an undue self-estimation, and a contempt of the rights of other men. He who measures the orbit of a comet has not, therefore, higher faculties than he who examines the cytoblast of a fungus; and there is far more to be seen by us in a beetle than in a planet; upon that granite mountain opposite, at the distance of nine or ten miles, than in the sun and in the moon and the stars.—*Natural History of Deeside*, p. 120.

30.—The Scenery of Benabuird.

On reaching the summit, I found it to be a long, broad, rounded ridge, covered with stones, some of which were rounded, others angular. Here were a few mosses and a considerable quantity of *Carex rigida*. The scene which here presented itself was exceedingly striking and impressive. All around, mountains appeared behind mountains, with their rocks, ridges, and valleys. A solemn stillness prevailed; nor was a living creature to be seen; the clouds rolled their dusky wreaths along the ridges. The beams of the setting sun darted here and there through the clouds, which exhibited a hundred ever-varying shades. In one direction a vast livid mass hung over the ridges of a mountain, its lower fringed margin beautifully tinged with deep crimson. In another place the white vapour which clung to the summits of the mountains assumed,

where opposed to the sunbeams, a roseate hue of the greatest delicacy. From a small lake in a rocky corrie, five or six miles distant, a white streamlet poured down an Alpine valley bounded by precipitous crags. In the west, through an opening of the clouds, was seen a range of lofty mountains, rising behind each other, the most distant being probably fifty miles off. To the west and north-west the mountains continued undiminished in size as far as the eye could reach, but to the east they rapidly diminished. The desolate ranges of Braemar have a solemn grandeur independently of atmospheric drapery, but partially enveloped in massy clouds, or overhung with a wavy curtain of gorgeously tinted vapour, their glories are superbly enhanced. But by degrees the purple and burnished gold and roseate hues faded away into dull bluish grey, dimness crept over the mountains, and my home was eight miles distant.—*Natural History of Deeside*, p. 124.

31.—Aged Birch Trees.

In ascending a valley towards the higher grounds, and after passing through a birch wood, you come upon scattered trees, having an aged aspect, and stunted dimensions. Some are yet vigorous in their old age; others, gnarled and knotted, with torn and ragged bark, partially denuded and decayed wood and thinly-clad branches. Many vicissitudes have these aged denizens of the forest seen: sunshine and gloom, calm and

tempest; the enlivening heat of summer and the cramping frosts of winter have come over them—how often one cannot tell. In the midst of them has the half-savage Celt of the olden time shot his arrow into the stately stag; and but yesterday has the smooth-faced and trimly-clad Saxon sent from his rifle, as he leant against one of their trunks, the whizzing messenger of death to the herd that reposed in peace upon the mossy knoll. Farther on, many trees lie prostrate on the hillside among a scattered group of melancholy survivors; and yet farther up the valley the ground is covered with trunks, erect, but decayed, broken down, shaggy with moss and lichen, rotten to the core, and crumbling under the action of the weather. Said I not well, that trees harmonise with human feelings? He who for the hundredth time could pass by such a scene and not experience its depressing effect must have a heart unfit for any gentle emotion. A trumpet could not more forcibly proclaim the inevitable death of all organic being than do these lifeless and silent monuments of ruin.—*Natural History of Deeside*, p. 169.

32.—The Wind in the Beallach-bhui Forest.

Once more in the Beallach-bhui forest, I seat myself on a mossy bank and gaze around. I am in the middle of a seeming amphitheatre of hills, formed of ranges extending from Craig Clunie, on the right, up to the

crags of Lochnaneun, on the shoulder of Lochnagar, and a ridge descending, on the left, from that mountain down to the Dee. Beyond the river, northward, is seen the rugged and partly wooded face of a brown hill, forming a kind of corrie, and a pine wood extending from it. But that all on that side may be excluded from the scene, we turn from it.

There is a sprinkling of birch in the lower parts of the forest, and here and there along the hills; but pines, stately and solemn, rear their columnar stems around, some of giant stature, but the greater number of ordinary size; all, however, healthy and vigorous. Here, in the wood, the sunbeams glance upon us; for there is no continuous obscuration of the sky by the foliage; but far up the valley, and along the hills, the trees seem crowded into masses of dark verdure. The breezes, as they sweep over the woods, sound like the noise of the ocean-wave, as they dash upon a distant rock. Suddenly a rushing sound is heard coming from afar. It advances, and, as it passes by, resembles the roar of a mighty flood. A blast from the mountain-pass has swept over the forest, bending the stiff tops of the lofty pines. Were a hurricane, or even a winter tempest, to invade the valley, rending off the massy limbs, and prostrating the old trunks, the scene would be terrific. We may fancy, too, the magnificence of a protracted thunder-storm—impenetrable gloom over all the forests, lightnings blazing, and thunders crashing; but I have never found imaginary scenes so instructive as real occurrences, and that chiefly because they are radically unreal, and one

knows them to be so. The wind has ceased, and the forest rests in solemn stillness. You can see far away into the forest, between the stems, which are destitute of branches to a great height. Here the ground is covered with luxuriant tufts of heather in full bloom; there the stones are coated with moss and lichens; and on that low knoll the continuous verdure is due to the yet fresh leaves of the *Vaccinium myrtillus.*—*Natural History of Deeside*, p. 178.

33.—Merry-Making of Birds.

The sun sent a gleam of light through the Pass of Ballater into the plain, and illumined the hill-tops on the western side, while their shadows spread far over the fields. The hill along the base of which I walked is covered with pines, and, partly, opposite the village, with birches. Great numbers of chaffinches flew along from tree to tree, apparently enjoying the sunshine, occasionally chasing each other, and engaging in mimic conflicts. I was drawn into the wood by hearing a singular chorus of many shrill voices in the trees, and, looking up, observed a multitude of little birds of several species frisking about in great glee. Most of them were coal-tits, ringlets, blue tits, and willow-wrens; but there were also many chaffinches, and some common linnets. Great numbers of ringlets occurred in other parts of the wood. I was amused with the movements of a pair of coal-tits, which separated from the rest, and

betook themselves to an excavation in the diluvium, from the turf margin of which there hung a number of slender tree-roots. One of the tits flew in among them, frisked from one to another, clung to a long filament, and appeared to enjoy the motion, as it swayed backwards and forwards. The other bird then joined it, and they seemed content for a while to amuse themselves apart from their companions. There was a general merry-making among the little birds. They seemed, after the labours of the day, old and young together, to indulge in frolic before retiring to rest.

Many species of mammalia, birds, and fishes, evidently pass a portion of their time in sport. Young animals are especially addicted to romping, as may be seen in foals, calves, and especially lambs and kids, as well as puppies and kittens. The same is observed in birds, wild and domestic, in hawks, rooks, finches, and poultry. No birds are more gracefully sportive than ducks of all kinds are on the water. Not the gentle only, but also the ferocious, enjoy themselves in this manner. Eagles and ravens I have often seen wheeling and gliding through the air in sport, while they gave expression to their delight in loud and modulated cries. —*Natural History of Deeside*, p. 184.

34.—The Highland Moor.

Leaning against a cairn constructed of angular stones of grey porphyry, supplied by a heap close at hand, I

survey an extensive tract of mountain and moor. The sun, shining clear in a cloudless pale blue sky, gives some warmth to my right side, while a breeze from the north-east comes whirling at times round the cairn, chilling me with its piercing blasts. It is the 4th of September, near sunset. I stand in the midst of a region which might be thought one of stillness and desolation, were it not that symptoms of human life are seen in five little patches of cultivated land, and a group of black huts in a hollow, from one to two miles distant. Yet the range of vision is not less than fifty miles in one direction. Just behind me are the summits of a hill range, not more than a mile distant, beyond which nothing is to be seen; and therefore I have turned my back upon them. To the left is a rounded hill, running down into a smooth ridge, over a depression in which are seen the hills beyond Ballater, topped by the conical summit of the more distant Mount Keen, singularly white in the pale rays of the western sun. Low ranges extend from it, until there rises, in the south, the massive form of Lochnagar—both its corries conspicuously displayed; the western illuminated, the eastern in deep impenetrable shade, veiled by a filmy grey vapour. A most beautiful undulated ridgy descent leads the eye to the Glen Ballater mountains, the Beallach-bhui, and the Braemar hills as far as the upper part of Glen Ey. The great mountain stands conspicuous in its massy breadth and towering height, as if upheaved beyond its ordinary elevation. At its base, near Loch Muic, is a large rounded hill; but elsewhere, all down to the Dee, the

ground seems low, presenting only some undulations, which, although really of some considerable height, are scarcely noticeable from our present station. On this side of the Dee, the position of which is known only by recollection, is a range of low hills, undulated in its outline, but high enough to prevent us from seeing those hills that seemed mountains to us as we traversed the valley. Where the Braemar mingle with the Atholl ranges in the extreme distance, the horizon is next bounded by a roundish hill, only about five miles distant. Then Ben Aun rising behind, with its long unwaved, but curiously knobbed ridge, leads us to the blaze of the western sun, just passing behind the broad head of the Bho-dhoun, which, at only the distance of two miles, seems continuous with the hill on which we stand. The long shadows cast upon the grey and brown moors by the many prominences of the Lochnagar group have a singular and rather perplexing effect; for they give the well-known tract an aspect different from any under which we have contemplated it, whether in the sunshine of noontide, the diffused light of a cloudy day, or when the summits, involved in vapours, hid themselves from our view, and the bases of the mountains seemed more massy than they ever do when their entire forms are disclosed.

But now, over the ridge of Ben Aun, creeps a thin and flaky mass of vapour, glowing on its northern side with a roseate tint; purplish rays diverge from behind the brown hill to our right; the white summit of Mona-Chuine has assumed a roseate hue, and Lochnagar is

tinged with a pale purplish blue. Beautifully delicate are the tints of the few fleecy cloudlets that rise in the north-west; but the setting sun assumes no imposing glory, and as he passes on seems to smile a gentle good-night on the brown moors of Glen Gairn.

The red grouse call to each other on the hill-side; here, a solitary grey hare bounds quietly among the short heather, stops to listen and look around, then pursues its way; some hooded crows, that have been prowling about, are flying down the little valley; dimness envelops the low grounds, then the bases of the hills, creeping upwards, slowly, imperceptibly, but surely, like age and time, ever moving onward, and involving all things in darkness. There is now no sound but the sighing of the breeze; and as we descend over the long smooth declivity, clad with thick heather, we pause not to listen to the hum of distant waterfalls, or the shriek of the white owl, for no torrents rush over these moors, nor ruined towers rise on the brown hills, where the gor-cock (*Lagopus scoticus*), escaped from the gun of the unpitying sportsman, crouches with the remnant of his family.—*Natural History of Deeside*, pp. 207, 208.

35.—Three Pine Trees.

Three stunted trees among rubbish have a most singular effect. One can hardly believe his eyes when they tell him they are pines. How came they there? What is their purpose? Why are there not more of

them? How old are they? Very easy it is to ask questions which nobody can answer. A fourth tree has grown there also, but it lies overthrown, unbarked, and rotting. Their bent and rugged trunks indicate poverty and old age. Many storms of wind and rain have burst upon them; the sun has blazed fiercely upon their tufted foliage, and the parched crags have sent back his rays upon their spreading branches. The snows of winter have pressed them down, and the sapless soil has refused them nourishment in summer; their kindred have perished one by one; the last of their brethren lies prostrate beside them; they are the remnants of a once numerous and prosperous race, and when they perish there will be no monument but this passing notice to indicate that they once were.—*Natural History of Deeside*, p. 239.

36.—Ravens—Poor Fellows!

The path leads along the base of the furrowed and stony declivities, which are of granite, coarse and reddish, like that of the opposite side. All along this passage it was very pleasant to hear the ravens, in the crags of the opposite side, talking to each other in a great variety of accents, one answering the call of another. Poor fellows! if the glen were mine I would give strict orders not to molest them; for, next to the eagle, now altogether destroyed, the raven is the greatest ornament of such a scene. They continued

croaking, barking, yelping at a great rate until I had passed the end of the rock.—*Natural History of Deeside,* p. 252.

37.—Home.

But it is now getting toward six o'clock, and, as my resting-place is a good way off, it is time to proceed. When I ascended the valley of the Dee, in the end of July, the woods rejoiced in the warm breezes, and spread their green foliage to the sun. Now, in the middle of September, they seem preparing for the winter; their discoloured and sapless leaves, smitten by the night-frosts and seared by the drought, show no gladness, but speak of decay — beautiful in its gradations, like the passage of the aged Christian to the grave, and very pleasing to the sobered and contemplative mind. I have this year seen these woods of Crathes, when their twigs bore nothing but buds, when their tender leaves were unfolding, when their foliage covered them as a mantle; and now, in passing, I observe them streaked and patched with the yellow tints of autumn. Winter will again strip them of all their vesture; but they "will hear the voice of spring and flourish green again." So shall we, whose life is Christ.

An easterly wind, not cold and penetrating, brings up the clouds successively from the Celtic sea. But scarcely any rain falls, and at intervals the moon is

seen dimly defined through the grey vapour. Farmers are returning in carts and gigs from the market, it being Friday; but otherwise the road is dull, it being much less frequented at any time than that on the north side.

Not an inn nor a shop could I find anywhere, and having neither eaten nor drunk since twelve o'clock, I resolved, on reaching Maryculter, to make application for tea and bread, the favourite food of sedentary people, and assuredly the most invigorating of all to the wearied pedestrian. How much refreshed I felt after an hour's rest and a plentiful meal, any one may understand who has an elastic temperament. The milestones which I had been counting were no longer consulted; and as little of the well-known scenery was visible under the faint light of the moon, veiled by the grey vapours, I mused on many things as I walked quickly along.

The Divine Providence has rendered my path pleasant to me in the rugged corrie, in the thick wood, and in the green valley; has prepared friends to forward my views, to protect me under their hospitable roofs and instruct me by their conversation; has restored me to health, and preserved it to me; has enabled me to accomplish the purpose of my journey, and filled me with gratitude now that I approach its termination.

Kind reader! it is time to bid thee "Good-night."
—*Natural History of Deeside*, p. 305.

38.—Scene at Torquay.

It is well that the observations from which these descriptions have been prepared were made many years ago, when I was full of enthusiasm, and enjoyed the blessings of health and freedom from engrossing public duties; for I am persuaded that now I should be in some respects less qualified for the task, more, however, from the failure of physical than of mental power. Here, on the rocky promontory, I shiver in the breeze which, to my companion, is but cool and bracing. The east wind ruffles the sea, and impels the little waves to the shores of the beautiful bay, which present alternate cliffs of red sandstone and beaches of yellow sand, backed by undulated heights and gentle acclivities, slowly rising to the not distant horizon, fields and woods, with villages and scattered villas forming—not wild nor altogether tame—a pleasing landscape which, in its summer and autumn garniture of grass and corn, and sylvan verdure, orchard blossom and fruit, tangled fence-bank and furze-clad common, will be beautiful indeed to the lover of Nature. Then the balmy breezes from the west and south will waft health to the reviving invalid. At present the cold vernal gales sweep along the channel, conveying to its haven the extended fleet of boats that render Brixham, on the opposite horn of the bay, one of the most celebrated of the southern fishing-stations of England. High over the

waters, here and there, a solitary gull slowly advances against the breeze, or shoots athwart, or with a beautiful gliding motion sweeps down the aërial current. At the entrance to Torquay are assembled many birds of the same kind which, by their hovering near the surface, their varied evolutions and mingling cries, indicate a shoal, probably of atherines or sprats. On that little pyramidal rock, projecting from the water, repose two dusky cormorants; and, far away, in the direction of Portland Island, a gannet, well known by its peculiar flight, winnows its exploring way, and plunges headlong into the deep. But neither time nor place are favourable to the observation of the wading tribes, although the country around supplies the greater number of those found in Britain.—*British Birds,* vol. iv. p. viii.

VII

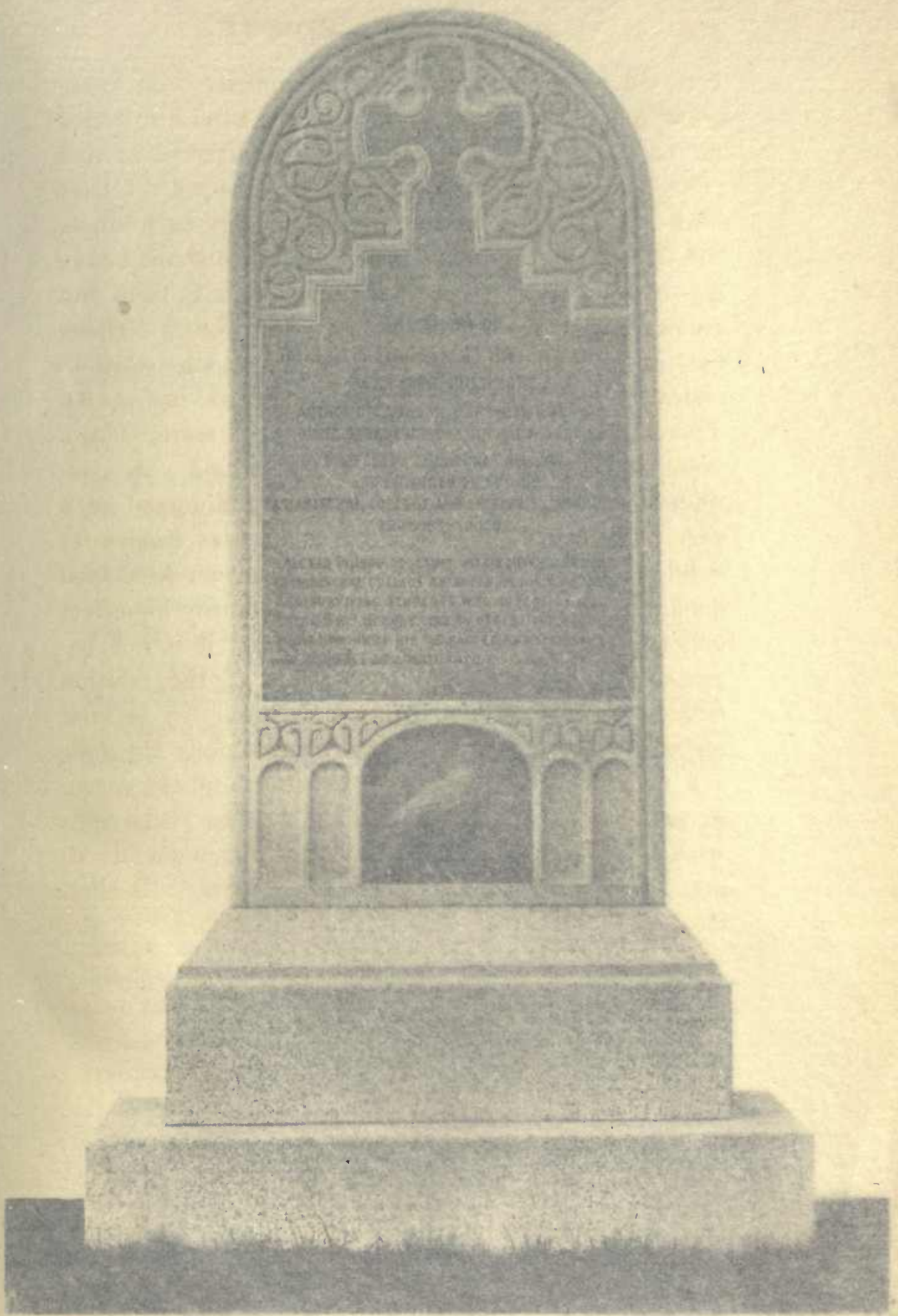
LIFE'S WORK ENDED

Conclusion.

I HAVE finished one of the many difficult and laborious tasks which I had imposed upon myself. Twelve years have elapsed since the first three volumes of this work were issued to the public, and I had scarcely hoped to see its completion, when I was most unexpectedly encouraged to revise the manuscript of the two remaining volumes, containing the wading and swimming birds, of which the history, in so far as I am acquainted with it, is now given on the same plan as that adopted for the land birds. Commenced in hope, and carried on with zeal, though ended in sorrow and sickness, I can look upon my work without much regard to the opinions which contemporary writers may form of it, assured that what is useful in it will not be forgotten, and knowing that already it has had a beneficial effect on many of the present, and will more powerfully influence the next, generation of our home-ornithologists. I had

been led to think that I had occasionally been somewhat rude, or at least blunt, in my criticisms; but I do not perceive wherein I have much erred in that respect, and I feel no inclination to apologise. I have been honest and sincere in my endeavours to promote the truth. With death, apparently not distant, before my eyes, I am pleased to think that I have not countenanced error through fear or favour. Neither have I in any case modified my sentiments so as to endeavour thereby to conceal or palliate my faults. Though I might have accomplished more, I am thankful for having been permitted to add very considerably to the knowledge previously obtained of a very pleasant subject. If I have not very frequently indulged in reflections on the power, wisdom, and goodness of God, as suggested by even my imperfect understanding of His wonderful works, it is not because I have not ever been sensible of the relation between the Creator and His creatures, nor because my chief enjoyment, when wandering among the hills and valleys, exploring the rugged shores of the ocean, or searching the cultivated fields, has not been in a sense of His presence. "To Him who alone doeth great wonders" be all glory and praise. Reader, farewell!—*British Birds*, vol. v., "Conclusion."

"Servant of God, well done"



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